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**STATE OF KANSAS  
MULTIPLE-DISCHARGER  
WASTEWATER LAGOON AMMONIA  
VARIANCE –  
SUBMISSION PACKAGE**



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Prepared by Kansas Department of Health and Environment  
Watershed Planning, Monitoring, and Assessment Section/Bureau of Water  
Division of Environment

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## **State of Kansas**

### **Multiple-Discharger Wastewater Lagoon Ammonia Variance**

**Summary:** This document provides an overview of the components of Kansas' multiple discharger variance for ammonia and how they work together to satisfy the requirements of the U.S. Environmental Protection Agency's water quality standards variance regulation at 40 CFR 131.14.

**Pollutant:** Ammonia

**Designated Use:** Aquatic Life Support

**Dischargers/Receiving Waters:** Only small municipalities with lagoon wastewater treatment systems that have optimized their current operation will be eligible for this variance. The list of dischargers potentially subject to the variance and their respective receiving waters can be found in Appendix A. Kansas has identified up to 322 dischargers potentially subject to the variance. The median size of towns with lagoons that are potentially subject to the variance is around 500 persons. The US Census Bureau estimates that towns in Kansas have 2.52 persons per household<sup>1</sup>. Therefore, 500 people actually equates to around 200 ratepayers.

**Kansas Lagoon Background:** Overall, facultative lagoon technology provides significant ammonia and nutrient reduction while utilizing no electricity, thus being a very "green" treatment option. NPDES permit limits based on the 2013 ammonia criteria (Appendix B) could be met by most facultative lagoons under certain climatic conditions.<sup>2</sup> Because ammonia concentrations in effluent from facultative lagoons in Kansas is strongly tied to climate (primarily temperature) they will not be expected to meet water quality-based ammonia permit limits based on the 2013 ammonia criteria under all climatic conditions; for example, systems might meet the limits nine months in one year and three months the next year. A study of well-designed and operated lagoons in Kansas indicates facultative lagoons provide very good treatment the majority of the year.<sup>3</sup> In Kansas, average ammonia, TN and TP concentrations are as follows, thus demonstrating good ammonia and nutrient removal: Ammonia - <2 mg/L; TN - <10 mg/L; and TP - <1.5 mg/L.

- In aggregate, the raw sewage flow treated by all potentially eligible lagoons in Kansas represents around 5.5% of NPDES flows in the

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<sup>1</sup> <http://www.census.gov/quickfacts/table/PST045215/20>

<sup>2</sup> KDHE is concurrently proposing adoption of the 2013 ammonia criteria

<sup>3</sup> Tate, M.B, K.W. Mueldener, R.R. Geisler, and E.W. Dillingham. 2002. Wastewater Stabilization Lagoons – Are They Still an Option? Kansas Department of Health and Environment, Topeka, KS.

state. In addition, State population projections show the majority of the counties where these small lagoon systems are located will see diminishing populations for the next 50 or more years, resulting in even lower discharge flows.<sup>4</sup>

- Diminishing flows represent reduced ammonia loading to the receiving water, thus lower receiving water ammonia concentration. That, coupled with good treatment on an ongoing basis represent a reduction in environmental risk.

**Underlying Use/Criterion:** Each receiving water identified in Appendix A will retain its underlying designated Aquatic Life Support use and ammonia criteria for purposes other than NPDES permit limits. All other WQS not specifically addressed by a variance continue to apply in those waters. *See Appendix C, “Kansas Water Quality Standards Implementation Procedures”, page 11 and Kansas Administrative Regulation (K.A.R.) 28-16-28f(d).*

**No Lowering of Water Quality:** Implementation of this MDV will not result in any lowering of existing water quality, but rather the water quality is expected to improve as much as possible with the Pollutant Minimization Plan (PMP). (*See Appendix D, “Kansas Water Quality Standards Variance Register”, Section 2*). Current effluent quality will be met or improved by including permit limitations for ammonia at the 99<sup>th</sup> percentile of existing effluent quality, and by recognizing that effluent flows are expected to diminish over time as populations in the majority of affected communities are expected to decline. Reduced flow will result in reduced ammonia load to receiving streams and subsequently reduced ammonia concentration in the receiving streams.

**NPDES Use Only:** This MDV will be used solely to establish NPDES permit limits for ammonia for the potential dischargers identified in Appendix A that meet the eligibility requirements of this MDV. *See Appendix D, “Kansas Water Quality Standards Variance Register”, and Section 2 for the eligibility requirements and a list of facilities that have been screened and can potentially meet the requirements of the multiple-discharger variance. See Appendices E, “Kansas Eligibility Determination for Wastewater Lagoon Variances”, Appendix F, “Procedure to Calculate the Highest Attainable Condition under the Multiple-Discharger Wastewater Lagoon Ammonia Variance” and Appendix G, “Kansas Eligibility Determination for Wastewater Lagoon Variances – Ammonia Permit Writer Implementation Procedure”, for detail to determine eligibility.* Examples of the eligibility determination may be found in Appendix H. The MDV will not be used for any other Clean Water Act purposes. *See Appendix C.*

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<sup>4</sup> Kansas Population Forecast from 2014 to 2064. Wichita State University Center for Economic Development and Business Research, [http://www.cedbr.org/index.php?option=com\\_wrapper&view=wrapper&Itemid=521](http://www.cedbr.org/index.php?option=com_wrapper&view=wrapper&Itemid=521). Retrieved September 14, 2016.

**Demonstration of Need:** KS's demonstration of need for this MDV is based on 40 CFR §131.10(g)(6) – “Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact”.

Appendix G demonstrates why requiring eligible dischargers to meet effluent limits based on the 2013 ammonia acute and chronic criteria would result in substantial and widespread economic and social impact. Appendix I shows estimates of household wastewater treatment costs to meet the 2013 ammonia criteria as a % of MHI for all Kansas cities and towns sorted by population. This analysis shows that over 70% of Kansas' small discharge lagoon communities would see rates in excess of 2% of median household income (MHI) with 44% seeing replacement costs over double that at 4% of MHI. A threshold value of 2% of Median Household Income (MHI) is used in EPA's *Interim Economic Guidance for Water Quality Standards* workbook (EPA-823-B-95-002) as a screening mechanism to assess the potential for substantial economic impact. Thus, the vast majority of Kansas towns are highly likely to incur substantial economic impacts if required to meet the 2013 ammonia criteria. Table 2.2 - Assessment of Substantial Impacts Matrix - in the Economic Guidance indicates that if the primary indicator (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, at a level 100% greater than the 2% MHI, the 4% value represents a threshold level where completion of the secondary economic tests is expected to be an unnecessary expenditure of resources. As discussed previously, the median population served by discharging facultative lagoons is around 500 persons, or 200 rate paying units based on a report produced under contract to EPA. Two hundred ratepayers do not generate enough revenue to afford construction of a mechanical treatment plant that would reliably meet NPDES ammonia limits based on the 2013 ammonia criteria<sup>5</sup>.

The analysis described above shows that the substantial economic and social impacts resulting from complying with the 2013 ammonia criteria would be widespread because the impacts would occur in small towns across the state and affect all residents in those towns. In addition, the population of the majority of counties where these dischargers are located is decreasing. The Wichita State University Center for Economic Development and Business Research forecasts counties that are home to over 70% of the potentially affected lagoon facilities will lose population over the next 50 years. (*See footnote 4*) In those cases, loss of population will distribute wastewater costs over a smaller population, thus increasing the per capita cost for treatment.

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<sup>5</sup> TetraTech and ECONorthwest (2015) Kansas Lagoon Upgrades to Meet Water Quality Standards for Ammonia - Cost Analysis for Replacement with Mechanical Systems

**HAC:** 40 CFR §131.14 (b)(1)(ii)(A) identifies three possible ways to quantify the Highest Attainable Condition (HAC). Since there is no additional feasible pollutant control technology available beyond optimizing existing technology, this variance identifies the following HAC consistent with the regulation: (1) the greatest pollutant reduction achievable by the existing treatment technology (multi-cell facultative lagoon) being achieved through optimization and (2) implementation of required PMPs.

- No additional feasible ammonia control could be identified that would routinely meet the 2013 ammonia criteria. Kansas evaluated several retrofit options, including aerated lagoons and lagoon covers.
- Aerated lagoons have proven unsuccessful in Kansas in trials across the state – even those designed for operating depths deeper than the 5 foot depth for facultative lagoons. Because of cold weather operations leading to a pattern of not achieving current ammonia limits year round Kansas has eliminated all but 3 municipal aerated lagoon systems in the state. The remaining aerated lagoon systems discharge into large streams with sufficient assimilative capacity for their effluent. The addition of aeration to existing, shallow facultative lagoons in Kansas more rapidly cool the lagoon water in winter where average cool temperatures routinely drop below freezing for several months each year. Cooler temperatures equate to diminishing ammonia reduction. In addition, aerators may re-suspend solids from the bottom of the lagoon, further degrading the effluent. There is no basis to conclude these aerated lagoon retrofits would comply with the more stringent 2013 recommended ammonia criteria when lagoons designed for aeration could not meet the less stringent 1999 ammonia criteria.

Covering shallow facultative lagoons to trap heat has not been previously practiced in Kansas. Again, with shallow Kansas lagoons (5 feet deep) and extended cold periods in the winter, covers are an expensive and unproven technology. It is unlikely an engineer could guarantee permit compliance with the 2013 recommended ammonia criteria with an unproven technology.

The only treatment system identified that would allow Kansas municipal dischargers to reliably meet the ammonia criteria is a mechanical treatment plant with biological nitrogen removal. The results of the TetraTech report referenced in footnote 5 show that replacement with a mechanical plant is unaffordable for most communities. Affordability will be determined individually for each community applying for the variance using the worksheet in Appendix F - Kansas Eligibility Determination for Wastewater Lagoon Variance.

- Optimization. Only dischargers with well-functioning, “optimized” facultative lagoon systems will be eligible for this multiple discharger variance. Optimization for facultative lagoons is more difficult than for mechanical treatment plants. With short detention mechanical plants (<24 hr) they are set up for optimizing by being able to be fine-tuned in terms of how much aeration is provided, where the air is provided, how much mixed liquor suspended solids (MLSS) is recycled, etc. Those functions are all controlled by electric blowers, pumps, and valves. Facultative lagoons are long detention (>120 days), quiescent basins that do not have those types of controls. That said, KDHE considers lagoons to be optimized based on the manner in which lagoons are constructed, operated, and regulated by the state. Those things KDHE require to ensure optimized operation include:

1. Design.

- a. All KS lagoons are required to be multi-cell. Multi-cell lagoons provide better treatment for several reasons.
  - i. The initial cells can provide most of the treatment while final cells polish the effluent.
  - ii. Multiple cells allow the lagoon systems to be run differently due to climatic conditions – parallel operation in the winter when microbial activity is lower, and series operation in the summer when microbial activity is higher. Parallel operation allows influent to be distributed over two or more cells, so even if lower microbial activity occurs due to cooler temperatures, more microbes will be exposed to the initial waste and provide better treatment than series operation. NOTE: the rule of thumb in design is that microbial activity drops by 50% for every 10° C drop in temperature.
- b. All KS lagoons are required to have long minimum detention times (>120 days) which is at the conservative end of the 90-120 days recommended by the Ten States Standards<sup>6</sup>. Longer detention promotes better treatment.
- c. All KS lagoons are shallow, allowing for light penetration that drives photosynthesis (green algae growth which provides oxygen) and oxygenation of most of the lagoon.

2. Inspections. KS has six field offices that inspect lagoons at least once every 5 years and work with operators to ensure the lagoons are in compliance with their permits. *See Appendix J for a copy of a lagoon inspection form, “Overflowing Stabilization*

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<sup>6</sup> Recommended Standards for Wastewater Facilities 2004 Edition. Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. <http://10statesstandards.com/wastewaterstandards.html#93>. Retrieved September 20, 2016.

*Lagoon – Kansas Water Pollution Control Inspection Report” addressing proper operation and maintenance.*

3. KS Lagoon Study (*See footnote 3*). KDHE has done a lagoon study on a group of facilities known to be well operated and maintained. We believe this study is unique to Kansas. The study gives KDHE an idea of the threshold that establishes expected performance in an empirical manner. By knowing the thresholds of properly operated and maintained facilities, KS can easily identify facilities that are not optimized (operating outside of the threshold values) and initiate appropriate technical assistance or enforcement in order to bring a lagoon back to an optimized condition.
  4. Compliance Reviews. KDHE staff meet monthly to review discharge monitoring report (DMR) data. **Kansas has required ammonia data be collected for over a decade, those data are reviewed as well as other DMR data for compliance and data trends.** When data appear to indicate declining operation, the Enforcement and Permitting staff chart a course of action that can include a follow up district office inspection, compliance assistance, or an order to bring the facility into compliance.
  5. Contract Technical Assistance. KDHE has a contract with the Kansas Rural Water Association (KRWA) to circuit ride wastewater treatment plants and provide operational and compliance assistance. Lagoon optimization is a significant portion of that contract. KRWA also provides no cost sludge depth measurement and charting for lagoon systems at the request of the system or KDHE.
- The Pollution Minimization Plan in the MDV establishes requirements for dischargers covered by the MDV to maintain optimized operation. The PMP will consist of global requirements for all permittees subject to the MDV as found in Appendix C and D.

Therefore, the Highest Attainable Condition (HAC) is represented by the current effluent concentration of a well-operated facility established as a permit limit, coupled with a PMP.

**Term:** The term of the MDV is 20 years from the date of EPA approval. The justification for this term follows:

- Consultation with researchers and treatment plant designers indicates that no low cost technologies affordable by small communities are foreseen within the term of this variance. While some promising low energy de-ammonification technologies exist, they are currently costly, difficult to control, and only being used for



high-strength ammonia side-streams at a handful of large US WWTPs<sup>7</sup>.

- A 20 year term would allow for two census cycles to occur, which will likely demonstrate the downward trending of the populations of many of the small cities where wastewater treatment lagoons are located.
- Each facility receiving the MDV will be re-evaluated every five years. *See Appendix C, page 14.* The primary purpose of the re-evaluation is to ensure that the highest attainable condition is reflected throughout the term of the variance. When a more stringent highest attainable condition is identified, that condition will become the applicable interim effluent condition. In addition, the re-evaluation will allow KDHE to consider and evaluate changes in technology, operation or design of the existing wastewater treatment system to further optimize the treatment of wastewater and reduce the discharge of the pollutant(s) subject to the WQS variance. If a technology is deemed to be affordable and available, the state will revise the permit to include implementation of such technology.

The term of 20 years is reasonable and appropriate in order to allow the state to reevaluate emerging and available technology and pollutant minimization strategies at each five year permit renewal since currently there is no anticipated cost-effective treatment, the facultative lagoon technology in place is already reflective of an optimized lagoon facility, low flows representing low ammonia loadings to receiving waters, and there is no expectation of increased community revenues to be able to fund conversion to mechanical treatment in the foreseeable future. However, if affordable technology becomes available, the permittee will be removed from the MDV and issued an individual permit with water quality-based limits.

**Required Implementation of HAC:** The requirements that apply throughout the term of the variance will be incorporated as enforceable conditions in the permits of those facilities subject to the MDV. Those requirements are:

- The permit limit will be set as the 99<sup>th</sup> percentile of historic values as described previously. *See Appendix F, "Procedures to Calculate the Highest Attainable Condition under the Kansas Ammonia MDV Variance – Alternative Ammonia Limits".*
- The permit will include a PMP as discussed above.
- The permit will contain unaltered limits for other parameters not subject to the MDV.
- The permit will carry standard conditions applicable to all permittees

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<sup>7</sup> Water Environment Federation (2015) *The Nutrient Roadmap*; WEF Special Publication; Water Environment Federation: Alexandria, Virginia.

**Reevaluation:** Since this MDV exceeds five years in length, a reevaluation for each permittee subject to the MDV will occur at intervals not greater than five years starting from the date the MDV is placed in the permit of any permittee subject to the MDV. The results of the evaluation will be submitted to EPA within 30 days of the completion of the evaluation. See *section 4 of Appendix C and Section 2 of Appendix D*.

One purpose of the re-evaluation is to ensure that the highest attainable condition is reflected throughout the term of the variance. If a more stringent yet attainable condition is identified during the re-evaluation that condition will become the applicable interim WQS. Conversely, if a review of the effluent data indicate more frequent than expected exceedance of the current HAC, KDHE will investigate the operations of the existing wastewater treatment to ascertain if the higher ammonia concentrations resulted from weather or operational situations. KDHE will then reissue the permit with conditions to address operational shortcomings in order to re-optimize the treatment system.

Additionally, the re-evaluation period allows KDHE to consider and evaluate changes in technology, operation or design of the existing wastewater treatment system to improve optimization of the treatment of wastewater and further reduce the discharge of the pollutant(s) subject to the WQS variance. Finally, KDHE will use the re-evaluation to confirm that the original demographic and economic conditions that justified the application of the variance in the existing permit continue to be present during the term of the reissued permit.

In any case, the HAC of the re-evaluated and reissued permit will remain sufficiently stringent to protect the receiving waters below the treatment system. See *Appendix C, page 14*.

The state will obtain public input on the reevaluation during the public notification period associated with permit renewal. The fact sheet for the permit will identify that the facility is receiving a variance.

If the state does not complete a reevaluation at the specified frequency, or does not submit to EPA the results of a reevaluation within 30 days of completion of the reevaluation, this MDV will no longer be the applicable water quality standard for CWA purposes. See *Appendix C, page 14, and Section 2 of Appendix D*.

**Public Participation:** Both the adoption of this MDV as a WQS and the issuance of individual permits issued subject to the MDV will follow the public notice and participation requirements found in State regulation at K.A.R. 28-16-61.

## APPENDIX A

### Potential Dischargers and Receiving Waters Affected by the Variance



**POTENTIAL DISCHARGERS AND RECEIVING WATERS AFFECTED by the  
MULTIPLE-DISCHARGER WASTEWATER LAGOON AMMONIA VARIANCE  
NOVEMBER 2, 2016**

<b>FACILITY NAME</b>	<b>PERMIT NUMBER</b>	<b>EXPIRATION DATE</b>	<b>RECEIVING STREAM</b>	<b>BASIN</b>	<b>HUC8</b>	<b>SEGMENT or LAKE PROJECT NAME CODE</b>
NEODESHA, CITY OF	M-VE29-OO01	6/30/2016	VERDIGRIS RIVER	VERDIGRIS	11070101	1
LACROSSE, CITY OF	M-UA23-OO02	6/30/2016	SAND CREEK	UPPER ARKANSAS	11030008	3
INMAN, CITY OF	M-LA08-OO01	6/30/2016	BLAZE FORK CREEK	LITTLE ARKANSAS	11030012	14
ALTOONA, CITY OF	M-VE01-OO01	6/30/2016	VERDIGRIS RIVER	VERDIGRIS	11070101	1
HAMILTON, CITY OF	M-VE20-OO01	6/30/2016	ONION CREEK VIA UNNAMED TRIBUTARY	VERDIGRIS	11070101	23
TRIBUNE, CITY OF	M-UA41-OO01	6/30/2016	WHITE WOMAN CREEK	UPPER ARKANSAS	11030002	2
BUFFALO, CITY OF	M-VE03-OO02	6/30/2016	BUFFALO CREEK	VERDIGRIS	11070101	2
CHERRYVALE, CITY OF	M-VE07-OO02	6/30/2016	DRUM CREEK	VERDIGRIS	11070103	34
ELK CITY, CITY OF	M-VE14-OO01	6/30/2016	ELK RIVER	VERDIGRIS	11070104	2
MOLINE, CITY OF	M-VE27-OO01	6/30/2016	ELK R VIA WILDCAT CR	VERDIGRIS	11070104	16
LEAVENWORTH CO. S.D. #5 GINGER CREEK	M-KS04-OO03	9/30/2016	HOG CREEK	KANSAS	10270104	54
KDOT - MONTGOMERY CO.	M-VE07-OO03	9/30/2016	DRUM CREEK VIA UNNAMED TRIBUTARY	VERDIGRIS	11070103	34
MC LOUTH, CITY OF	M-KS42-OO01	9/30/2016	KANSAS RIVER VIA NINE MILE CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270104	17
LONGTON, CITY OF	M-VE25-OO01	9/30/2016	ELK RIVER VIA HITCHEN CREEK	VERDIGRIS	11070104	7
HAVANA, CITY OF	M-VE21-OO01	9/30/2016	LITTLE CANEY RIVER VIA BEE CREEK	VERDIGRIS	11070106	9
DEARING, CITY OF	M-VE11-OO01	9/30/2016	ONION CREEK	VERDIGRIS	11070103	39
TYRO, CITY OF	M-VE37-OO01	9/30/2016	CANEY CREEK	VERDIGRIS	11070103	56

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
KDWP&T - CROSS TIMBERS - HONOR CAMP	M-VE36-OO03	9/30/2016	VERDIGRIS RIVER VIA CARLISLE BRANCH	VERDIGRIS	11070101	5
SEDAN, CITY OF	M-VE33-OO02	9/30/2016	LITTLE CANEY RIVER/MIDDLE CANEY CREEK	VERDIGRIS	11070106	12
LIBERTY, CITY OF	M-VE24-OO01	9/30/2016	BIG HILL CREEK VIA UNNAMED TRIBUTARY	VERDIGRIS	11070103	32
HOWARD, CITY OF	M-VE22-OO02	9/30/2016	ELK RIVER VIA PAW PAW CREEK	VERDIGRIS	11070104	11
MONTGOMERY CO. S.D. #4-HAVANA LAKE	M-VE21-OO02	9/30/2016	UNNAMED TRIB OF COTTON CR./VERDIGRIS	VERDIGRIS	11070106	38
FALL RIVER, CITY OF	M-VE17-OO01	9/30/2016	FALL RIVER VIA UNNAMED TRIBUTARY	VERDIGRIS	11070102	2
OTIS, CITY OF	M-UA31-OO01	9/30/2016	WALNUT CREEK VIA BOOT CREEK	UPPER ARKANSAS	11030008	15
DIGHTON, CITY OF	M-UA10-OO01	9/30/2016	SOUTH FORK WALNUT CREEK	UPPER ARKANSAS	11030007	10
VALLEY FALLS, CITY OF	M-KS73-OO01	9/30/2016	DELAWARE RIVER INTO LAKE PERRY	KANSAS	10270103	12
WAKEFIELD MWTP	M-LR24-OO01	9/30/2016	MILFORD LAKE VIA UNNAMED TRIBUTARY	LOWER REPUBLICAN	10250017	LM019001
CIMARRON, CITY OF	M-UA07-OO02	9/30/2016	ARKANSAS RIVER	UPPER ARKANSAS	11030003	1
NORTONVILLE, CITY OF	M-KS50-OO01	11/30/2016	STRANGER CREEK VIA CROOKED CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270104	12
WETMORE, CITY OF	M-KS78-OO02	12/31/2016	SPRING CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	42
MONTGOMERY CO. S.D. #5-SYCAMORE	M-VE40-OO01	12/31/2016	VERDIGRIS RIVER VIA UNNAMED TRIBUTARY	VERDIGRIS	11070103	36
EUREKA, CITY OF	M-VE16-OO02	12/31/2016	FALL RIVER VIA UNNAMED TRIBUTARY	VERDIGRIS	11070102	8
POWHATTAN, CITY OF	M-KS60-OO01	12/31/2016	DELAWARE RIVER VIA UNNAMED TRIBUTARY	KANSAS	10270103	22
THAYER, CITY OF	M-VE35-OO01	12/31/2016	CHETOPA CREEK VIA LITTLE CHETOPA CREEK	VERDIGRIS	11070101	471

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
LEAVENWORTH CO. S.D. #2 TIMBERLAKE	M-KS06-OO03	12/31/2016	KANSAS RIVER VIA WOLF CREEK	KANSAS	10270104	53
SMOLAN, CITY OF	M-SH36-OO01	12/31/2016	WEST DRY CREEK VIA UNNAMED TRIBUTARY; SMOKY HILL RIVER BASIN	SMOKY HILL	10260008	36
MADISON, CITY OF	M-VE26-OO02	12/31/2016	VERDIGRIS RIVER	VERDIGRIS	11070101	12
LANCASTER, CITY OF	M-KS29-OO01	12/31/2016	NORTH FORK OF STRANGER CREEK	KANSAS	10270104	9
PERRY, CITY OF	M-KS58-OO01	12/31/2016	OLD CHANNEL OF DELAWARE RIVER	KANSAS	10270104	23
MUSCOTAH, CITY OF	M-KS48-OO01	12/31/2016	DELAWARE RIVER	KANSAS	10270103	17
WINCHESTER, CITY OF	M-KS84-OO01	12/31/2016	CROOKED CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270104	12
HURON, CITY OF	M-KS26-OO01	12/31/2016	DELAWARE RIVER VIA LITTLE GRASSHOPPER CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	16
ARLINGTON, CITY OF	M-AR07-OO01	3/31/2017	NORTH FORK NINNESCAH RIVER	LOWER ARKANSAS	11030014	6
HARDTNER, CITY OF	M-AR39-OO02	3/31/2017	DRIFTWOOD CREEK	LOWER ARKANSAS	11060003	905
BURDEN, CITY OF	M-AR14-OO02	3/31/2017	SILVER CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11060001	17
HAVILAND, CITY OF	M-AR42-OO01	3/31/2017	LOST LAKE VIA UNNAMED TRIBUTARY.	LOWER ARKANSAS	11030014	NA
FUN VALLEY	M-AR49-OO01	3/31/2017	ARKANSAS RIVER	LOWER ARKANSAS	11030010	4
STAFFORD, CITY OF	M-AR84-OO01	3/31/2017	N. FORK NINNESCAH VIA DOOLEYVILLE CREEK	LOWER ARKANSAS	11030014	8
WINDOM, CITY OF	M-LA18-OO01	6/30/2017	LITTLE ARKANSAS RIVER VIA UNNAMED TRIBUTARY	LITTLE ARKANSAS	11030012	14
OXFORD, CITY OF	M-AR68-OO01	6/30/2017	ARKANSAS RIVER	LOWER ARKANSAS	11030013	2
WALTON, CITY OF	M-LA17-OO01	6/30/2017	SAND CREEK VIA BEAVER CREEK VIA UNNAMED TRIBUTARY	LITTLE ARKANSAS	11030012	26

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
TURON, CITY OF	M-AR89-OO01	6/30/2017	NORTH FORK NINNESCAH RIVER VIA SILVER CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030014	289
HOLYROOD, CITY OF	M-AR46-OO01	6/30/2017	PLUM CREEK	LOWER ARKANSAS	11030011	4
ATTICA, CITY OF	M-AR08-OO01	6/30/2017	SANDY CREEK VIA CAMP CREEK; LOWER ARKANSAS RIVER BASIN	LOWER ARKANSAS	11060004	68
ST. FRANCIS, CITY OF	M-UR18-OO01	6/30/2017	SOUTH FORK OF REPUBLICAN RIVER; UPPER REPUBLICAN RIVER BASIN	UPPER REPUBLICAN	10250003	4
ALMENA , CITY OF	M-UR01-OO02	6/30/2017	PRAIRIE DOG CREEK; UPPER REPUBLICAN RIVER BASIN	UPPER REPUBLICAN	10250015	4
CLEARWATER, CITY OF	M-AR22-OO01	6/30/2017	NINNESCAH RIVER	LOWER ARKANSAS	11030016	3
HOISINGTON, CITY OF	M-AR45-OO01	6/30/2017	COW CREEK VIA LITTLE CHEYENNE CREEK CHEYENNE BOTTOMS) VIA BLOOD CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030011	15
ATWOOD, CITY OF	M-UR02-OO01	6/30/2017	BEAVER CREEK	UPPER REPUBLICAN	10250014	2
NORTON CORRECTIONAL FACILITY	M-UR16-OO02	6/30/2017	PRAIRIE DOG CREEK VIA WALNUT CREEK	UPPER REPUBLICAN	10250015	4
ASHLAND, CITY OF	M-CI01-OO02	6/30/2017	CIMMARRON RIVER VIA BEAR CREEK	CIMARRON	11040008	18
ST. JOHN, CITY OF	M-AR77-OO01	6/30/2017	RATTLESNAKE CR	LOWER ARKANSAS	11030009	3
GEUDA SPRINGS, CITY OF	M-AR36-OO01	6/30/2017	ARKANSAS RIVER VIA SALT CREEK	LOWER ARKANSAS	11030013	22
DEXTER, CITY OF	M-AR30-OO01	6/30/2017	GROUSE CREEK	LOWER ARKANSAS	11060001	16
CONWAY SPRINGS, CITY OF	M-AR25-OO01	6/30/2017	ARKANSAS RIVER VIA SLATE CREEK	LOWER ARKANSAS	11030013	17
COLWICH, CITY OF	M-AR24-OO02	6/30/2017	ARKANSAS RIVER VIA COWSKIN CREEK	LOWER ARKANSAS	10030013	14



FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
BUCKLIN, CITY OF	M-AR13-OO01	6/30/2017	RATTLESNAKE CREEK VIA WEST FORK RATTLESNAKE CREEK	LOWER ARKANSAS	11030009	4
PECK IMPROVEMENT DISTRICT	M-AR09-OO04	6/30/2017	NINNESCAH RIVER VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030016	1
BELLE PLAINE, CITY OF	M-AR09-OO03	6/30/2017	NINNESCAH RIVER VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030016	1
ANTHONY, CITY OF	M-AR04-OO02	6/30/2017	LOWER ARKANSAS RIVER VIA BLUFF CREEK VIA SPRING CREEK	LOWER ARKANSAS	11060005	47
ANDALE, CITY OF	M-AR03-OO01	6/30/2017	ARKANSAS RIVER VIA COWSKIN CREEK	LOWER ARKANSAS	11030013	14
LEAVENWORTH CO. S.D. #1 HIGH CREST	M-KS04-OO04	9/30/2017	STRANGER CREEK VIA LITTLE SANDY CREEK	KANSAS	10270104	883
CHENEY, CITY OF	M-AR20-OO02	9/30/2017	NORTH FORK OF NINNESCAH RIVER	LOWER ARKANSAS	11030014	1
GOESSEL, CITY OF	M-LA05-OO02	9/30/2017	EMMA CREEK VIA MIDDLE EMMA CREEK	LITTLE ARKANSAS	11030012	7
EASTON, CITY OF	M-KS13-OO01	9/30/2017	STRANGER CREEK	KANSAS	10270104	8
CARBONDALE, CITY OF	M-KS07-OO01	9/30/2017	WAKARUSA RIVER VIA BURY'S CREEK	KANSAS	10270104	32
HARPER, CITY OF	M-AR40-OO01	9/30/2017	CHIKASKIA RIVER VIA SAND CREEK	LOWER ARKANSAS	110600005	12
CUNNINGHAM, CITY OF	M-AR27-OO01	9/30/2017	SOUTH FORK NINNESCAH RIVER; LOWER ARKANSAS RIVER BASIN	LOWER ARKANSAS	11030015	4
MEADE, CITY OF	M-CI12-OO02	9/30/2017	CROOKED CREEK VIA UNNAMED TRIBUTARY	CIMARRON	11040007	1
NORWICH, CITY OF	M-AR67-OO02	9/30/2017	NINNESCAH RIVER VIA SAND CREEK	LOWER ARKANSAS	11030016	14
CALDWELL, CITY OF	M-AR17-OO02	9/30/2017	FALL CREEK VIA AN UNNAMED TRIBUTARY; LOWER ARKANSAS RIVER BASIN	LOWER ARKANSAS	11060005	14

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
STERLING, CITY OF	M-AR85-OO01	11/30/2017	COW CREEK VIA BULL CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030011	1
EFFINGHAM, CITY OF	M-KS15-OO01	12/31/2017	STRANGER CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270104	9
VIOLA, CITY OF	M-AR90-OO01	12/31/2017	NINNESCAH RIVER VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030016	3
PRETTY PRAIRIE, CITY OF	M-AR75-OO02	12/31/2017	NINNESCAH RIVER VIA SMOOTS CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030015	2
HAVEN, CITY OF	M-AR41-OO01	12/31/2017	ARKANSAS RIVER VIA GAR CREEK	LOWER ARKANSAS	110310010	8
GENESEO, CITY OF	M-LA04-OO02	12/31/2017	LITTLE ARKANSAS RIVER	LITTLE ARKANSAS	11030012	14
ALDEN, CITY OF	M-AR02-OO01	12/31/2017	ARKANSAS RIVER	LOWER ARKANSAS	11030010	5
ARGONIA, CITY OF	M-AR05-OO01	12/31/2017	CHIKASKIA RIVER; LOWER ARKANSAS RIVER BASIN	LOWER ARKANSAS	110600005	8
NICKERSON, CITY OF	M-AR66-OO02	12/31/2017	ARKANSAS RIVER	LOWER ARKANSAS	11030010	4
PRESTON, CITY OF	M-AR74-OO02	12/31/2017	SILVER CREEK VIA UNNAMED TRIBUTARY	LOWER ARKANSAS	11030014	7
CHASE, CITY OF	M-AR19-OO01	12/31/2017	COW CREEK VIA SPRING CREEK	LOWER ARKANSAS	11030011	20
WILLOWBROOK, CITY OF	M-AR95-OO02	12/31/2017	COW CREEK	LOWER ARKANSAS	11030011	1
GALVA, CITY OF	M-LA03-OO01	12/31/2017	TURKEY CREEK VIA UNNAMED TRIBUTARY; LITTLE ARKANSAS RIVER BASIN	LITTLE ARKANSAS	11030012	12
JETMORE, CITY OF	M-UA21-OO02	12/31/2017	BUCKNER CREEK	UPPER ARKANSAS	110300006	2
MOUNDRIDGE, CITY OF	M-LA12-OO01	12/31/2017	BLACK KETTLE CREEK	LITTLE ARKANSAS	11030012	368
PARTRIDGE, CITY OF	M-AR70-OO01	12/31/2017	NORTH FORK NINNESCAH RIVER VIA RED ROCK CREEK	LOWER ARKANSAS	11030014	12

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
WILSEY, CITY OF	M-NE69-OO01	1/31/2018	ELM CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070201	946
ONEIDA, CITY OF	M-MO15-OO01	1/31/2018	SOUTH FORK NEMAHA RIVER VIA HARRIS CREEK	MISSOURI	10240007	166
COTTONWOOD FALLS, CITY OF	M-NE16-OO01	2/28/2018	COTTONWOOD RIVER	NEOSHO	11070203	2
COFFEY CO. S.D. #1 (JACOBS CREEK)	M-NE07-OO03	3/31/2018	NEOSHO RIVER VIA JACOB'S CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070201	LM072401
WATHENA, CITY OF	M-MO23-OO01	3/31/2018	MISSOURI RIVER	MISSOURI	10240011	15
TROY, CITY OF (PETERS CREEK)	M-MO22-OO01	3/31/2018	MISSOURI RIVER VIA PETERS CREEK	MISSOURI	10240011	27
ELWOOD, CITY OF	M-MO05-OO01	3/31/2018	MISSOURI RIVER	MISSOURI	10240011	15
CHEROKEE CO. S.D. #1	M-NE73-OO02	3/31/2018	SPRING RIVER	NEOSHO	11070205	33
WOODSON CO. IMP. DIST. #2	M-NE72-OO02	3/31/2018	PLUM CREEK VIA AN UNNAMED TRIBUTARY	NEOSHO	11070204	22
WHITE CITY, CITY OF	M-NE68-OO02	3/31/2018	NEOSHO RIVER VIA UNNAMED TRIBUTARY	NEOSHO	11070201	23
LEROY, CITY OF	M-NE42-OO01	3/31/2018	CROOKED CREEK	NEOSHO	11070204	44
OLPE, CITY OF	M-NE52-OO01	3/31/2018	NEOSHO RIVER VIA EAGLE CREEK	NEOSHO	11070201	25
MC CUNE, CITY OF	M-NE47-OO01	3/31/2018	MULBERRY CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	35
HARTFORD, CITY OF	M-NE33-OO01	3/31/2018	NEOSHO RIVER VIA UNNAMED TRIBUTARY	NEOSHO	11070201	26
GRIDLEY, CITY OF	M-NE32-OO01	3/31/2018	NEOSHO RIVER VIA BIG CREEK VIA SOUTH FORK BIG CREEK VIA DINNER CREEK	NEOSHO	11070204	823
COLUMBUS, CITY OF	M-NE15-OO01	3/31/2018	SPRING RIVER VIA BRUSH CREEK	NEOSHO	11070207	23
LEBO, CITY OF	M-NE40-OO01	3/31/2018	LEBO CREEK	NEOSHO	11070201	51
TROY, CITY OF (MOSQUITO CREEK)	M-MO22-OO02	3/31/2018	MISSOURI RIVER VIA MOSQUITO CREEK	MISSOURI	102400005	73

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
NEW STRAWN, CITY OF	M-NE51-OO01	3/31/2018	NEOSHO RIVER	NEOSHO	11070204	13
PEABODY, CITY OF	M-NE56-OO03	3/31/2018	DOYLE CREEK TO COTTONWOOD RIVER	NEOSHO	11070202	21
ALLEN CO. S.D. #1	M-NE37-OO02	3/31/2018	ROCK CREEK	NEOSHO	11070204	7
COUNCIL GROVE, CITY OF	M-NE17-OO01	3/31/2018	NEOSHO RIVER	NEOSHO	11070201	10
ALTA VISTA, CITY OF	M-NE05-OO01	3/31/2018	MUNKERS CREEK	NEOSHO	11070201	18
COLONY, CITY OF	M-NE14-OO01	3/31/2018	DEER CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070204	9
CANTON, CITY OF	M-NE09-OO02	3/31/2018	COTTONWOOD RIVER VIA DRY CREEK	NEOSHO	11070202	401
WEST MINERAL, CITY OF	M-NE48-OO01	3/31/2018	CHERRY CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	4
LINCOLNVILLE, CITY OF	M-NE43-OO01	3/31/2018	COTTONWOOD RIVER VIA CLEAR CREEK	NEOSHO	11070202	5
WEIR, CITY OF	M-NE67-OO01	6/30/2018	BRUSH CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070207	26
SCAMMON, CITY OF	M-NE61-OO01	6/30/2018	CHERRY CREEK VIA LITTLE CHERRY CREEK	NEOSHO	11070205	32
CHETOPA, CITY OF	M-NE13-OO01	6/30/2018	NEOSHO RIVER VIA TOWN CREEK	NEOSHO	11070205	28
MORRILL, CITY OF	M-MO13-OO01	6/30/2018	WALNUT CREEK VIA TERRAPIN CREEK	MISSOURI	10240008	308
BERN, CITY OF	M-MO02-OO01	6/30/2018	FOURMILE CREEK(NEB) VIA UNNAMED STREAM (KS/NEB LINE) VIA UNNAMED TRIBUTARY	MISSOURI	10240007	212
ARMA, CITY OF	M-NE03-OO01	6/30/2018	FIRST COW CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070207	27
LEHIGH, CITY OF	M-NE41-OO01	6/30/2018	FRENCH CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070202	16
ROBINSON, CITY OF	M-MO17-OO01	6/30/2018	WOLF RIVER	MISSOURI	10240005	56
FRONTENAC, CITY OF	M-NE27-OO01	6/30/2018	COW CREEK VIA FIRST COW CREEK	NEOSHO	11070207	27

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
NEOSHO RAPIDS, CITY OF	M-NE50-OO01	6/30/2018	NEOSHO RIVER VIA PLUM CREEK	NEOSHO	11070201	50
BARTLETT, CITY OF	M-NE04-OO01	6/30/2018	LAKE CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	24
ALTAMONT, CITY OF	M-NE01-OO01	6/30/2018	DEER CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	27
SENECA, CITY OF	M-MO19-OO01	6/30/2018	SOUTH FORK BIG NEMAHA RIVER	MISSOURI	10240007	16
WILLIS, CITY OF	M-MO31-OO01	6/30/2018	MIDDLE FORK WOLF RIVER VIA HAZEL CREEK	MISSOURI	1024005	67
STRONG CITY, CITY OF	M-NE63-OO01	6/30/2018	COTTONWOOD RIVER VIA FOX CREEK	NEOSHO	11070203	19
STARK, CITY OF	M-NE62-OO02	6/30/2018	NEOSHO RIVER VIA CANVILLE CREEK	NEOSHO	11070205	16
OSWEGO, CITY OF	M-NE53-OO01	6/30/2018	LABETTE CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	21
HIGHLAND, CITY OF	M-MO09-OO01	6/30/2018	MISSOURI RIVER VIA MISSION CREEK	MISSOURI	1024005	339
HEPLER, CITY OF	M-NE34-OO01	6/30/2018	WALNUT CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	13
GIRARD, CITY OF	M-NE31-OO01	6/30/2018	LIGHTNING CREEK VIA THUNDERBOLT CREEK	NEOSHO	11070205	44
DWIGHT, CITY OF	M-NE20-OO01	6/30/2018	LAIRDS CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070201	30
CHEROKEE, CITY OF	M-NE12-OO01	6/30/2018	LIMESTONE CREEK VIA WOLF CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	33
MARION, CITY OF	M-NE45-OO01	6/30/2018	COTTONWOOD RIVER	NEOSHO	11070202	3
LA HARPE, CITY OF	M-NE39-OO02	6/30/2018	ELM CREEK VIA UNNAMED TRIBUTARY VIA CONSTRUCTED WETLANDS	NEOSHO	11070204	1050
AMERICUS, CITY OF	M-NE02-OO01	6/30/2018	ALLEN CREEK VIA TROUBLESOME CREEK VIA PESTER CREEK	NEOSHO	11070201	5

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
WILSON CO. S.D. #1 (TULAKES)	M-NE11-OO04	6/30/2018	VILLAGE CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070204	33
FLORENCE, CITY OF	M-NE26-OO01	6/30/2018	COTTONWOOD RIVER VIA DOYLE CREEK	NEOSHO	11070202	21
BURLINGTON, CITY OF	M-NE07-OO02	6/30/2018	NEOSHO RIVER	NEOSHO	11070204	13
ERIE, CITY OF	M-NE25-OO01	6/30/2018	NEOSHO RIVER VIA UNNAMED TRIBUTARY	NEOSHO	11070205	15
ST. PAUL, CITY OF	M-NE59-OO02	6/30/2018	NEOSHO RIVER VIA FLAT ROCK CREEK VIA KDWP&T NEOSHO WILDLIFE AREA WETLANDS	NEOSHO	11070205	LM053401
GALESBURG, CITY OF	M-NE29-OO02	6/30/2018	LABETTE CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	22
WALNUT, CITY OF	M-NE66-OO01	9/30/2018	NEOSHO RIVER VIA ROCK CREEK VIA BIG WALNUT CREEK VIA LITTLE WALNUT CREEK	NEOSHO	11070205	46
SOLOMON, CITY OF	M-SO39-OO01	12/31/2018	SOLOMON RIVER	SOLOMON	10260015	1
GALENA, CITY OF	M-NE28-OO01	12/31/2018	SPRING RIVER VIA UNNAMED TRIBUTARY	NEOSHO	11070207	3
HILLSBORO, CITY OF	M-NE35-OO02	12/31/2018	SOUTH COTTONWOOD RIVER VIA UNNAMED TRIBUTARY	NEOSHO	11070202	456
FAIRVIEW, CITY OF	M-MO06-OO02	12/31/2018	WALNUT CREEK VIA SPRING CREEK VIA UNNAMED TRIBUTARY	MISSOURI	10240008	39
MULBERRY, CITY OF	M-MC27-OO01	3/31/2019	COX CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290104	324
CRAWFORD CO. S.D. #4 - FARLINGTON	M-MC52-OO01	3/31/2019	WEST FORK DRYWOOD CREEK VIA UNNAMED TRIBUTARY VIA DRAINAGE DITCH	MARAIS DES CYGNES	10290104	323
TIPTON, CITY OF	M-SO42-OO01	3/31/2019	SOUTH FORK SOLOMON RIVER VIA CARR CREEK VIA UNNAMED TRIBUTARY	SOLOMON	10260014	21

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
UNIONTOWN, CITY OF	M-MC46-OO01	3/31/2019	MARMATON RIVER	MARAIS DES CYGNES	10290104	12
CENTROPOLIS SEWER DISTRICT	M-MC62-OO01	3/31/2019	EIGHT MILE CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	13
RICHMOND, CITY OF	M-MC43-OO01	3/31/2019	MIDDLE CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	50
POMONA, CITY OF	M-MC36-OO01	3/31/2019	MARAIS DES CYGNES RIVER	MARAIS DES CYGNES	10290101	18
SALINE COUNTY SEWER DISTRICT - KIPP	M-SH46-OO02	3/31/2019	GYPSON CREEK VIA WEST BRANCH GYPSON CREEK VIA UNNAMED TRIBUTARY	SMOKY HILL	10260008	44
LANE, CITY OF	M-MC19-OO01	3/31/2019	POTTAWATOMIE CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	51
USD #362 PRAIRIE VIEW SCHOOL	M-MC18-OO02	3/31/2019	ELM CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290102	40
BURLINGAME, CITY OF	M-MC07-OO01	3/31/2019	DRAGOON CREEK VIA SWITZLER CREEK	MARAIS DES CYGNES	10290101	80
MINNEAPOLIS, CITY OF	M-SO27-OO02	3/31/2019	LINDSEY CREEK VIA UNNAMED TRIBUTARY	SOLOMON	10260015	1
PALCO, CITY OF	M-SO30-OO02	3/31/2019	SPRING CREEK VIA UNNAMED TRIBUTARY	SOLOMON	10260013	817
RUSSELL, CITY OF	M-SH31-OO02	5/31/2019	FOSSIL CREEK VIA UNNAMED TRIBUTARY	SMOKY HILL	10260006	13
MORAN, CITY OF	M-MC25-OO01	6/30/2019	MARMATON RIVER VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290104	12
MOUND CITY, CITY OF	M-MC26-OO01	6/30/2019	LITTLE SUGAR CREEK	MARAIS DES CYGNES	10290102	33
LUCAS, CITY OF	M-SA08-OO02	6/30/2019	SALINE RIVER VIA WOLF CREEK	SALINE	10260010	12
PLEASANTON, CITY OF	M-MC35-OO01	6/30/2019	MARAIS DES CYGNES RIVER VIA MUDDY CREEK	MARAIS DES CYGNES	10290102	46

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
PARKER, CITY OF	M-MC34-OO01	6/30/2019	NORTH FORK SUGAR CREEK VIA GOODRICH CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290102	39
PRINCETON, CITY OF	M-MC38-OO01	6/30/2019	MARAIS DES CYGNES RIVER VIA MIDDLE CREEK	MARAIS DES CYGNES	10290101	50
SCRANTON MWTP	M-MC44-OO01	6/30/2019	DRAGOON CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	27
NATOMA, CITY OF	M-SA10-OO01	6/30/2019	SALINE RIVER VIA PARADISE CREEK	SALINE	10260009	7
BEVERLY, CITY OF	M-SA01-OO01	6/30/2019	SALINE RIVER VIA UNNAMED TRIBUTARY	SALINE	10260010	3
HARVEYVILLE, CITY OF	M-MC16-OO01	6/30/2019	DRAGOON CREEK	MARAIS DES CYGNES	10290101	27
GREELEY, CITY OF	M-MC14-OO01	6/30/2019	SOUTH FORK POTTAWATOMIE CREEK	MARAIS DES CYGNES	10290101	67
ELLSWORTH, CITY OF	M-SH07-OO01	6/30/2019	SMOKY HILL RIVER VIA OAK CREEK	SMOKY HILL	10260006	5
LOUISBURG - PLANT #2	M-MC20-OO02	6/30/2019	SOUTH WEA CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290102	20
BRONSON, CITY OF	M-MC06-OO01	6/30/2019	MARMATON RIVER VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290104	12
HILLSDALE IMPROVEMENT DISTRICT	M-MC60-OO01	6/30/2019	TEN MILE CREEK	MARAIS DES CYGNES	10290102	25
LOUISBURG MWTP #1 (NORTH)	M-MC20-OO01	6/30/2019	MARAIS DES CYGNES RIVER VIA SOUTH WEA CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290102	20
MELVERN MWTP	M-MC23-OO01	6/30/2019	MARAIS DES CYGNES RIVER VIA FROG CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	42
MILTONVALE MWTP	M-SH27-OO01	6/30/2019	CHAPMAN CREEK	SMOKY HILL	10260008	4
DELPHOS, CITY OF	M-SO11-OO02	6/30/2019	SOLOMON RIVER	SOLOMON	10260015	12
MARQUETTE	M-SH25-OO01	7/31/2019	SMOKEY HILL RIVER	SMOKY HILL	10260008	15



FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
USD #288 CENTRAL HEIGHTS	M-MC43-OO02	8/31/2019	POTTAWATOMIE CREEK VIA SAC BRANCH CREEK VIA NORTH FORK SAC BRANCH CREEK	MARAIS DES CYGNES	10290101	9054
GYPSUM, CITY OF	M-SH15-OO02	9/30/2019	GYPSUM CREEK	SMOKY HILL	10260008	18
OSBORNE, CITY OF	M-SO29-OO02	9/30/2019	SOUTH FORK SOLOMON RIVER	SOLOMON	10260014	3
ARCADIA, CITY OF	M-MC03-OO01	9/30/2019	COX CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290104	324
ESKRIDGE, CITY OF	M-MC09-OO01	9/30/2019	DRAGOON CREEK	MARAIS DES CYGNES	10290101	27
FULTON, CITY OF	M-MC12-OO01	9/30/2019	LITTLE OSAGE RIVER	MARAIS DES CYGNES	10290103	3
OSAGE CITY, CITY OF	M-MC29-OO01	9/30/2019	SALT CREEK	MARAIS DES CYGNES	10290101	29
QUENEMO, CITY OF	M-MC39-OO01	9/30/2019	MARAIS DES CYGNES RIVER	MARAIS DES CYGNES	10290101	30
REDFIELD, CITY OF	M-MC42-OO01	9/30/2019	MARMATON RIVER VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290104	12
SAVONBURG, CITY OF	M-NE60-OO01	9/30/2019	CANVILLE CREEK VIA UNNAMED TRIBUTARY	NEOSHO	11070205	16
PLAINVILLE, CITY OF	M-SA14-OO02	9/30/2019	PARADISE CREEK VIA UNNAMED TRIBUTARY	SALINE	10290009	7
ASSARIA, CITY OF	M-SH02-OO01	9/30/2019	SMOKY HILL RIVER	SMOKY HILL	10260008	13
TESCOTT MWTP	M-SA17-OO01	9/30/2019	SALINE RIVER	SALINE	10260010	3
SUNDOWNER WEST MEADOWS	M-SA20-OO01	9/30/2019	MULBERRY CREEK VIA UNNAMED TRIBUTARY	SALINE	10260010	21
OGDEN, CITY OF	M-KS51-OO02	9/30/2019	KANSAS RIVER VIA DRY BRANCH CREEK	KANSAS	10270101	6
KINCAID	M-MC17-OO01	9/30/2019	NORTH FORK LITTLE OSAGE RIVER VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290103	220
RANTOUL, CITY OF	M-MC40-OO01	9/30/2019	MARAIS DES CYGNES RIVER	MARAIS DES CYGNES	10290101	3

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
LINN VALLEY, CITY OF	M-MC67-OO01	9/30/2019	MIDDLE CREEK VIA LINN VALLEY LAKE	MARAIS DES CYGNES	10290102	42
MC CRACKEN, CITY OF	M-SH26-OO02	10/31/2019	SMOKY HILL RIVER VIA BIG TIMBER CREEK	SMOKY HILL	10260006	27
WILSON, CITY OF	M-SH40-OO02	10/31/2019	SMOKY HILL RIVER VIA WILSON CREEK	SMOKY HILL	10260006	40
READING, CITY OF	M-MC41-OO01	10/31/2019	MARAIS DES CYGNES RIVER VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	37
FONTANA, CITY OF	M-MC10-OO01	10/31/2019	UNNAMED TRIBUTARY TO MARAIS DES CYGNES	MARAIS DES CYGNES	10290102	16
BLUE MOUND, CITY OF	M-MC05-OO02	10/31/2019	LITTLE OSAGE RIVER VIA IRISH CREEK	MARAIS DES CYGNES	10290103	202
ADMIRE, CITY OF	M-MC01-OO01	10/31/2019	ONE HUNDRED FORTY-TWO MILE CREEK VIA HILL CREEK	MARAIS DES CYGNES	10290101	71
QUINTER, CITY OF	M-SA15-OO01	10/31/2019	COYOTE CREEK VIA UNNAMED TRIBUTARY	SALINE	10260009	1061
ALLEN, CITY OF	M-MC02-OO01	10/31/2019	HILL CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	71
WILLIAMSBURG, CITY OF	M-MC50-OO02	10/31/2019	EAST BRANCH TEQUA CREEK VIA MILL CREEK	MARAIS DES CYGNES	10290101	1589
KDOT - FRANKLIN CO. REST AREA	M-MC31-OO02	10/31/2019	MIDDLE CREEK VIA PAYNE CREEK	MARAIS DES CYGNES	10290101	50
SPRING HILL, CITY OF (LAGOON)	M-MC45-OO01	11/30/2019	BULL CREEK VIA TEN MILE CREEK VIA SWEETWATER CREEK	MARAIS DES CYGNES	10290102	49
BENNINGTON, CITY OF	M-SO06-OO02	11/30/2019	SOLOMON RIVER VIA SAND CREEK	SOLOMON	10260015	4
GORHAM, CITY OF	M-SH10-OO01	12/31/2019	BIG CREEK VIA WALKER CREEK VIA UNNAMED TRIBUTARY	SMOKY HILL	10260007	2
LINCOLN, CITY OF	M-SA07-OO02	12/31/2019	SALINE RIVER	SALINE	10260010	5
DOWNS, CITY OF	M-SO12-OO02	12/31/2019	NORTH FORK SOLOMON RIVER VIA UNNAMED TRIBUTARY	SOLOMON	10260012	5

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
KENSINGTON, CITY OF	M-SO21-OO02	12/31/2019	NORTH FORK SOLOMON RIVER VIA CEDAR CREEK VIA MIDDLE CEDAR CREEK	SOLOMON	10260012	19
ULYSSES, CITY OF	M-CI22-OO04	12/31/2019	FRAZIER LAKE ON NORTH FORK CIMARRON RIVER	CIMARRON	10260012	19
ANDERSON CO S. D. #1 - WELDA	M-MC53-OO01	12/31/2019	CEDAR CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	66
LINN CO. SD #1 - CENTERVILLE	M-MC64-OO01	12/31/2019	BIG SUGAR CREEK VIA SUGAR CREEK	MARAIS DES CYGNES	10290102	42
WESTPHALIA, CITY OF	M-MC49-OO01	12/31/2019	POTTAWATOMIE CREEK VIA CHERRY CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	74
WAVERLY, CITY OF	M-MC47-OO01	12/31/2019	ROCK CREEK VIA UNNAMED TRIBUTARY	MARAIS DES CYGNES	10290101	43
OVERBROOK, CITY OF	M-MC32-OO01	12/31/2019	POMONA RESERVOIR VIA VALLEY BROOK CREEK	MARAIS DES CYGNES	10290101	LM028001
PRESCOTT, CITY OF	M-MC37-OO02	12/31/2019	LITTLE OSAGE RIVER VIA LABERDIE CREEK VIA EAST LABERDIE CREEK	MARAIS DES CYGNES	10290103	13
LA CYGNE, CITY OF	M-MC18-OO01	12/31/2019	MARAIS DES CYGNES RIVER	MARAIS DES CYGNES	10290102	15
GLEN ELDER, CITY OF	M-SO18-OO01	12/31/2019	SOLOMON RIVER VIA LIMESTONE CREEK	SOLOMON	10260015	18
OBERLIN, CITY OF	M-UR17-OO02	12/31/2019	SAPPA CREEK	UPPER REPUBLICAN	10250011	4
BROOKVILLE, CITY OF	M-SA02-OO01	12/31/2019	WEST SPRING CREEK	SALINE	10260010	25
WAKEENEY, CITY OF	M-SH38-OO02	12/31/2019	BIG CREEK VIA UNNAMED TRIBUTARY	SMOKY HILL	10260007	7

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
MILFORD, CITY OF	M-LR17-OO01	3/31/2020	REPUBLICAN RIVER (MILFORD RESERVOIR)	LOWER REPUBLICAN	10250017	LM019001
OLSBURG, CITY OF	M-BB18-OO01	3/31/2020	TUTTLE CREEK RESERVOIR VIA CARNAHAN CREEK VIA BOOTH CREEK VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	LM021001
BUTLER CO. S.D. #17 (BEAUMONT)	M-WA23-OO01	3/31/2020	WALNUT RIVER VIA HICKORY CREEK VIA NORTH BRANCH OF HICKORY CREEK	WALNUT	11030018	9012
MANKATO, CITY OF	M-LR16-OO02	3/31/2020	REPUBLICAN RIVER VIA MIDDLE BUFFALO CREEK	LOWER REPUBLICAN	10250017	9037
WHITING, CITY OF	M-KS81-OO01	3/31/2020	NEGRO CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	43
NETAWAKA, CITY OF	M-KS49-OO01	3/31/2020	DELAWARE RIVER VIA STRAIGHT CREEK VIA SPRING CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	42
HOME CITY SEWER DIS. 1 - MARSHALL CO.	M-BB27-OO01	3/31/2020	BIG BLUE RIVER VIA SPRING CREEK VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	19
VERMILLION, CITY OF	M-BB20-OO01	3/31/2020	BLACK VERMILLION RIVER	BIG BLUE	10270205	14
MARYSVILLE, CITY OF	M-BB13-OO02	3/31/2020	BIG BLUE RIVER	BIG BLUE	10270205	20
GREENLEAF, CITY OF	M-BB08-OO01	3/31/2020	COON CREEK VIA UNNAMED TRIBUTARY	BIG BLUE	10270207	23
BLUE RAPIDS, CITY OF	M-BB04-OO01	3/31/2020	BIG BLUE RIVER	BIG BLUE	10270205	17
COURTLAND, CITY OF	M-LR09-OO01	3/31/2020	REPUBLICAN RIVER VIA BEAVER CREEK VIA UNNAMED TRIBUTARY	LOWER REPUBLICAN	10250017	45
CORNING, CITY OF	M-KS94-OO01	3/31/2020	VERMILLION CREEK	KANSAS	10270102	18
JEFFERSON CO. SD #7 & 8 (LAKE RIDGE)	M-KS56-OO04	3/31/2020	PERRY LAKE VIA UNNAMED TRIBUTARY	KANSAS	10270103	LM029001
ALMA, CITY OF	M-KS01-OO01	3/31/2020	MILL CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	27
DELIA, CITY OF	M-KS10-OO01	3/31/2020	KANSAS RIVER VIA SALT CREEK	KANSAS	10270102	88

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
RILEY, CITY OF	M-KS62-OO02	3/31/2020	KANSAS RIVER VIA WILDCAT CREEK	KANSAS	10270101	2
RANDOLPH, CITY OF	M-BB19-OO01	6/30/2020	TUTTLE CREEK RESERVOIR VIA FANCY CREEK VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	LM021001
FRANKFORT, CITY OF	M-BB07-OO01	6/30/2020	BLACK VERMILLION RIVER	BIG BLUE	10270205	11
CENTRALIA, CITY OF	M-BB05-OO01	6/30/2020	BLACK VERMILLION RIVER VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	14
LAKE WABAUNSEE IMP. DIST.	M-KS92-OO02	6/30/2020	KS RIVER/MILL CRK/EAST BRANCH MILL CRK	KANSAS	10270102	693
MORGANVILLE, CITY OF	M-LR18-OO01	6/30/2020	REPUBLICAN RIVER/ DRY CREEK	LOWER REPUBLICAN	10250017	1369
CLIFTON, CITY OF	M-LR06-OO01	6/30/2020	REPUBLICAN RIVER	LOWER REPUBLICAN	10250017	9
BUTLER CO. S.D. #09 (ROSALIA)	M-WA19-OO01	6/30/2020	HARRISON CREEK VIA UNNAMED TRIBUTARY	WALNUT	11030017	8
SILVER LAKE, CITY OF	M-KS69-OO01	6/30/2020	KANSAS RIVER VIA ENSIGN CREEK	KANSAS	10270102	11
LAKIN, CITY OF	M-UA24-OO01	6/30/2020	ARKANSAS RIVER VIA UNNAMED TRIBUTARY	UPPER ARKANSAS	11030001	3
KDOT - WABAUNSEE CO. REST AREA I-70	M-KS57-OO02	6/30/2020	MILL CREEK	KANSAS	10270102	27
GOFF, CITY OF	M-KS21-OO01	6/30/2020	SPRING CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	42
USD #335 JACKSON HTS. SCHOOLS	M-KS23-OO02	6/30/2020	STRAIGHT CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	28
BAILEYVILLE IMPROVEMENT DISTRICT #1	M-BB26-OO02	6/30/2020	BLACK VERMILLION RIVER VIA NORTH FORK BLACK VERMILLION RIVER VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	15
USD #345 SEAMAN SENIOR HIGH SCHOOL	M-KS72-OO18	6/30/2020	SOLDIER CREEK VIA HALFDAY CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	97

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
WHITEWATER, CITY OF	M-WA16-OO02	9/30/2020	WALNUT RIVER VIA WEST BRANCH WHITEWATER RIVER	WALNUT	11030017	25
KDOT - GREENWOOD CO. REST AREA (K-96)	M-WA23-OO02	9/30/2020	SOUTH BRANCH LITTLE WALNUT RIVER VIA UNNAMED TRIBUTARY	WALNUT	11030018	34
OAKLEY, CITY OF	M-SH29-OO02	9/30/2020	NORTH BRANCH HACKBERRY CREEK VIA UNNAMED TRIBUTARY	SMOKY HILL	10260005	5
LEON, CITY OF	M-WA11-OO02	9/30/2020	LITTLE WALNUT RIVER	WALNUT	11030018	13
AUBURN, CITY OF	M-KS03-OO02	9/30/2020	WAKARUSA RIVER VIA UNNAMED TRIBUTARY	KANSAS	10270104	31
ONAGA, CITY OF	M-KS53-OO01	9/30/2020	VERMILLION CREEK VIA HISE CREEK	KANSAS	10270102	43
WHEATON, CITY OF	M-KS79-OO01	9/30/2020	CLEAR FORK OF THE BLACK VERMILLION RIVER	KANSAS	10270205	9
LITTLE RIVER, CITY OF	M-LA10-OO02	9/30/2020	LITTLE ARKANSAS RIVER	LITTLE ARKANSAS	11030012	14
AXTELL, CITY OF	M-BB01-OO01	9/30/2020	BIG BLUE RIVER VIA NORTH FORK BLACK VERMILLION RIVER	BIG BLUE	10270205	15
HANOVER, CITY OF	M-BB10-OO02	9/30/2020	LITTLE BLUE RIVER	BIG BLUE	10240207	2
WATERVILLE, CITY OF	M-BB22-OO01	9/30/2020	LITTLE BLUE RIVER	BIG BLUE	10270207	1
WASHINGTON, CITY OF	M-BB21-OO01	9/30/2020	MILL CREEK VIA PLUM CREEK	BIG BLUE	10270207	16
SUMMERFIELD, CITY OF	M-BB23-OO01	9/30/2020	BLACK VERMILLION RIVER VIA ROBIDOUX CREEK	BIG BLUE	10270205	16
TERRA HEIGHTS - RILEY CO.	M-BB25-OO05	9/30/2020	BIG BLUE RIVER VIA UNNAMED TRIBUTARY	BIG BLUE	10270205	2
BELVUE, CITY OF	M-KS05-OO01	9/30/2020	KANSAS RIVER VIA LOST CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	60
HAVENSVILLE, CITY OF	M-KS22-OO01	9/30/2020	SPRING CREEK VIA STRAIGHT CREEK	KANSAS	10270102	48
HOYT, CITY OF	M-KS25-OO01	9/30/2020	WEST FORK MUDDY CREEK	KANSAS	10270102	93
MAYETTA, CITY OF	M-KS40-OO01	9/30/2020	SOUTH CEDAR CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	9032
MCFARLAND, CITY OF	M-KS41-OO01	9/30/2020	MILL CREEK VIA PAW PAW CREEK	KANSAS	10270102	75

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
ROSSVILLE, CITY OF	M-KS64-OO01	9/30/2020	CROSS CREEK	KANSAS	10270102	12
SOLDIER, CITY OF	M-KS70-OO01	9/30/2020	SOLDIER CREEK	KANSAS	10270102	9009
SHAWNEE CO. M.S.D. #2-INDIAN CRK	M-KS72-OO24	9/30/2020	INDIAN CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	1367
WESTMORELAND, CITY OF	M-KS75-OO01	9/30/2020	EAST FORK ROCK CREEK	KANSAS	10270102	22
ATLANTA, CITY OF	M-WA02-OO01	9/30/2020	LOWER DUTCH CREEK VIA UNNAMED TRIBUTARY	WALNUT	11030018	20
DOUGLASS, CITY OF	M-WA07-OO03	9/30/2020	WALNUT RIVER	WALNUT	11030018	10
ELBING, CITY OF	M-WA08-OO01	9/30/2020	WHITEWATER RIVER VIA HENRY CREEK	WALNUT	11030017	33
BENTON, CITY OF	M-WA04-OO01	12/31/2020	WEST BRANCH WHITEWATER RIVER VIA UNNAMED TRIBUTARY	WALNUT	11030017	24
CUBA, CITY OF	M-BB06-OO01	12/31/2020	SOUTH FORK MILL CREEK	BIG BLUE	10270207	31
BURRTON, CITY OF	M-LA02-OO01	12/31/2020	KISIWA CREEK VIA NORTH BRANCH KISIWA CREEK	LITTLE ARKANSAS	11030012	15
EMMETT, CITY OF	M-KS16-OO01	12/31/2020	CROSS CREEK	KANSAS	10270102	12
TOWANDA, CITY OF	M-WA14-OO02	12/31/2020	WHITEWATER RIVER VIA UNNAMED TRIBUTARY	WALNUT	11030017	18
EVEREST, CITY OF	M-KS18-OO01	12/31/2020	OTTER CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	41
UDALL, CITY OF	M-WA15-OO01	12/31/2020	WALNUT RIVER VIA STEWART CREEK VIA UNNAMED TRIBUTARY	WALNUT	11030018	28
CLYDE, CITY OF	M-LR07-OO01	12/31/2020	REPUBLICAN RIVER	LOWER REPUBLICAN	10250017	13
USD #450 SHAWNEE HEIGHTS JR-SR HIGH	M-KS72-OO14	12/31/2020	WHETSTONE CREEK VIA LAKE JIVARO VIA UNNAMED TRIBUTARY	KANSAS	10270102	LM075001
PAXICO, CITY OF	M-KS57-OO01	12/31/2020	MILL CREEK VIA MULBERRY CREEK	KANSAS	10270102	77
JEFFERSON CO SD #2 - INDIAN RIDGE	M-KS56-OO05	12/31/2020	PERRY LAKE VIA UNNAMED TRIBUTARY	KANSAS	10270103	LM029001

FACILITY NAME	PERMIT NUMBER	EXPIRATION DATE	RECEIVING STREAM	BASIN	HUC8	SEGMENT or LAKE PROJECT NAME CODE
MAPLE HILL, CITY OF	M-KS39-OO01	12/31/2020	MILL CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	27
POTWIN, CITY OF	M-WA12-OO01	12/31/2020	WHITEWATER RIVER VIA BRUSH CREEK VIA UNNAMED TRIBUTARY	WALNUT	11030017	21
BEATTIE, CITY OF	M-BB03-OO01	12/31/2020	ROBIDOUX CREEK VIA WOLF CREEK	BIG BLUE	10270205	16
LEONARDVILLE, CITY OF	M-KS35-OO01	12/31/2020	WILDCAT CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270101	2
LINWOOD, CITY OF	M-KS36-OO01	12/31/2020	STRANGER CREEK VIA NINE MILE CREEK	KANSAS	10270104	15
MERIDEN, CITY OF	M-KS43-OO01	12/31/2020	MUDDY CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270102	2
CHAUTAUQUA, CITY OF	M-VE06-OO01	3/31/2021	TURKEY CREEK	VERDIGRIS	11070106	
JEFFERSON CO. S.D. #6 LAKE SHORE ESTATE	M-KS56-OO06	3/31/2021	PERRY LAKE VIA UNNAMED TRIBUTARY	KANSAS	10270103	LM029001
OSKALOOSA, CITY OF	M-KS54-OO01	3/31/2021	SLOUGH CREEK VIA UNNAMED TRIBUTARY	KANSAS	10270103	9
SEVERY, CITY OF	M-VE34-OO01	3/31/2021	SALT CREEK	VERDIGRIS	11070102	14
EDNA, CITY OF	M-VE12-OO01	3/31/2021	DEER CREEK	VERDIGRIS	11070103	51
MOUND VALLEY, CITY OF	M-VE28-OO01	3/31/2021	PUMPKIN CREEK VIA UNNAMED TRIBUTARY	VERDIGRIS	11070103	28
CEDAR VALE, CITY OF	M-VE05-OO01	3/31/2021	CANEY RIVER VIA CEDAR CREEK	VERDIGRIS	11070106	30
RANSOM, CITY OF	M-UA34-OO01	3/31/2021	WALNUT CREEK VIA BAZINE DRY CREEK	UPPER ARKANSAS	11030008	9



## APPENDIX B

### Kansas Surface Water Quality Standards – Tables of Numeric Criteria

#### Tables 1c and 1d



**Table 1c. pH- and Temperature-Dependent Values Aquatic Life Criteria For Total Ammonia Acute Criterion**

Total ammonia as N, mg/L.

pH	Temperature, °C																					
	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
6.5	51.0	48.0	44.0	41.0	37.0	34.0	32.0	29.0	27.0	25.0	23.0	21.0	19.0	18.0	16.0	15.0	14.0	13.0	12.0	11.0	9.9	
6.6	49.0	46.0	42.0	39.0	36.0	33.0	30.0	28.0	26.0	24.0	22.0	20.0	18.0	17.0	16.0	14.0	13.0	12.0	11.0	10.0	9.5	
6.7	46.0	44.0	40.0	37.0	34.0	31.0	29.0	27.0	24.0	22.0	21.0	19.0	18.0	16.0	15.0	14.0	13.0	12.0	11.0	9.8	9.0	
6.8	44.0	41.0	38.0	35.0	32.0	30.0	27.0	25.0	23.0	21.0	20.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.2	8.5	
6.9	41.0	38.0	35.0	32.0	30.0	28.0	25.0	23.0	21.0	20.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.4	8.6	7.9	
7.0	38.0	35.0	33.0	30.0	28.0	25.0	23.0	21.0	20.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.3	8.5	7.9	7.3	
7.1	34.0	32.0	30.0	27.0	25.0	23.0	21.0	20.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.3	8.5	7.9	7.2	6.7	
7.2	31.0	29.0	27.0	25.0	23.0	21.0	19.0	18.0	16.0	15.0	14.0	13.0	12.0	11.0	9.8	9.1	8.3	7.7	7.1	6.5	6.0	
7.3	27.0	26.0	24.0	22.0	20.0	18.0	17.0	16.0	14.0	13.0	12.0	11.0	10.0	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3	
7.4	24.0	22.0	21.0	19.0	18.0	16.0	15.0	14.0	13.0	12.0	11.0	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7	
7.5	21.0	19.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0	
7.6	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	
7.7	15.0	14.0	13.0	12.0	11.0	10.0	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9	
7.8	13.0	12.0	11.0	10.0	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5	
7.9	11.0	9.9	9.1	8.4	7.7	7.1	6.6	6.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1	
8.0	8.8	8.2	7.6	7.0	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7	
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	
8.2	6.0	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96	
8.4	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65	
8.6	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54	
8.7	2.3	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45	
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32	
9.0	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27	

**Table 1d. pH- and Temperature-Dependent Values Aquatic Life Criteria For Total Ammonia Chronic Criterion**

Total ammonia as N, mg/L.

pH	Temperature, °C																							
	0-7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	4.9	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.5	1.4	1.3	1.2	1.1
6.6	4.8	4.5	4.3	4.0	3.8	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1
6.7	4.8	4.5	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1
6.8	4.6	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
6.9	4.5	4.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0
7.0	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	0.99
7.1	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95
7.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90
7.3	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.97	0.91	0.85
7.4	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90	0.85	0.79
7.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.83	0.78	0.73
7.6	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.1	0.98	0.92	0.86	0.81	0.76	0.71	0.67
7.7	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60
7.8	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53
7.9	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47
8.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60	0.56	0.53	0.50	0.44	0.44	0.41
8.1	1.5	1.5	1.4	1.3	1.2	1.1	1.1	0.99	0.92	0.87	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35
8.2	1.3	1.2	1.2	1.1	1.0	0.96	0.90	0.84	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30
8.3	1.1	1.1	0.99	0.93	0.87	0.82	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26
8.4	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.28	0.26	0.25	0.23	0.22
8.5	0.80	0.75	0.71	0.67	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.24	0.22	0.21	0.20	0.18
8.6	0.68	0.64	0.60	0.56	0.53	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31	0.29	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.16	0.15
8.7	0.57	0.54	0.51	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13
8.8	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11
8.9	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.11	0.10	0.09
9.0	0.36	0.34	0.32	0.30	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08

## APPENDIX C

### Kansas Water Quality Standards Implementation Procedures



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# KANSAS IMPLEMENTATION PROCEDURES

## Surface Water Quality Standards



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Prepared by Kansas Department of Health and Environment  
Watershed Planning, Monitoring, and Assessment Section/Bureau of Water  
Division of Environment

November 29, 2017

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These written procedures provide a uniform mechanism for interpreting Kansas Surface Water Quality Standards in waters of the state.

## **1 SURFACE WATER CLASSIFICATION**

All ponds owned by federal, state, county, or municipal authorities and all privately owned ponds that impound water from a classified stream segment are classified ponds and a portion of those ponds are listed in the Kansas Surface Water Register.

Applicable Regulations: 28-16-28d(a)

### **1.1 CLASSIFIED STREAM SEGMENTS**

Classified stream segments are all stream segments that:

- 1) Are waters of the state as defined in subsection (a) of K.S.A. 65-161, and amendments thereto, and waters described in subsection (d) of K.S.A. 65-171d, and amendments thereto, and
- 2) Meet one of the following criteria:
  - a. Stream segments indicated on the federal environmental protection agency's Reach File 1 (RF1) (1982) and have the most recently available 10-year median flow of equal to or in excess of 1 cubic foot per second (cfs) based on data collected and evaluated by the United States Geological Survey. In the absence of measured stream segment flow data, calculations of flow conducted by extrapolation methods provided by the United States Geological Survey may be used.
  - or
  - b. Stream Segments not indicated on RF1 and have the most recently available 10-year median flow of equal to or in excess of 1 cubic foot per second based on data collected and evaluated by the United States Geological Survey or in the absence of stream segment flow data, calculations of flow conducted by extrapolation methods provided by the United States Geological Survey may be used.
  - or
  - c. Stream segments actually inhabited by threatened or endangered aquatic species listed in rules and regulations promulgated by the Kansas Department of Wildlife and Parks or the United States Fish and Wildlife Service. The Kansas Department of Wildlife and Parks and the United States Fish and Wildlife Service will be consulted in order to determine the presence of threatened and endangered species.

or

- d. Stream segments where scientific studies conducted by the department show that pooling of water during periods of flow below 1 cfs provides important refuges for aquatic life and permits biological recolonization during periods of intermittent flow.

or

- e. Stream segments at the point of, and downstream from the point of discharge from a facility permitted under the National Pollutant Discharge Elimination System (NPDES). Note: confined animal feeding operations (CAFOs) are not permitted to have a continuous discharge. Therefore, this provision does not apply to NPDES-permitted CAFOs as defined in K.S.A. 65-171d, and amendments thereto.

A schematic depiction of the process is provided in Figure 1 on the following page.

## **1.2 CLASSIFIED LAKES AND RESERVOIRS**

All lakes managed by federal, state, county, or municipal entities and those private lakes and reservoirs used for public drinking water supply or open to the general public for secondary contact recreation, are classified lakes and reservoirs, a portion of those lakes and reservoirs are listed in the Kansas Surface Water Register.

## **1.3 CLASSIFIED WETLANDS**

All wetlands managed by federal, state, county, or municipal entities, those wetlands classified as outstanding national resource waters, exceptional state waters, or designated as special aquatic life use waters, are classified wetlands and a portion of those wetlands are listed in the Kansas Surface Water Register. Those privately owned wetlands open to the general public for hunting, trapping, or other secondary contact recreational activities are also classified wetlands. Artificially created wetlands for wastewater treatment are not considered classified wetlands.

## **1.4 CLASSIFIED PONDS**

All ponds owned by federal, state, county, or municipal authorities and all privately owned ponds that impound water from a classified stream segment are classified ponds and a portion of those ponds are listed in the Kansas Surface Water Register.

## Stream Segment Classification Scheme

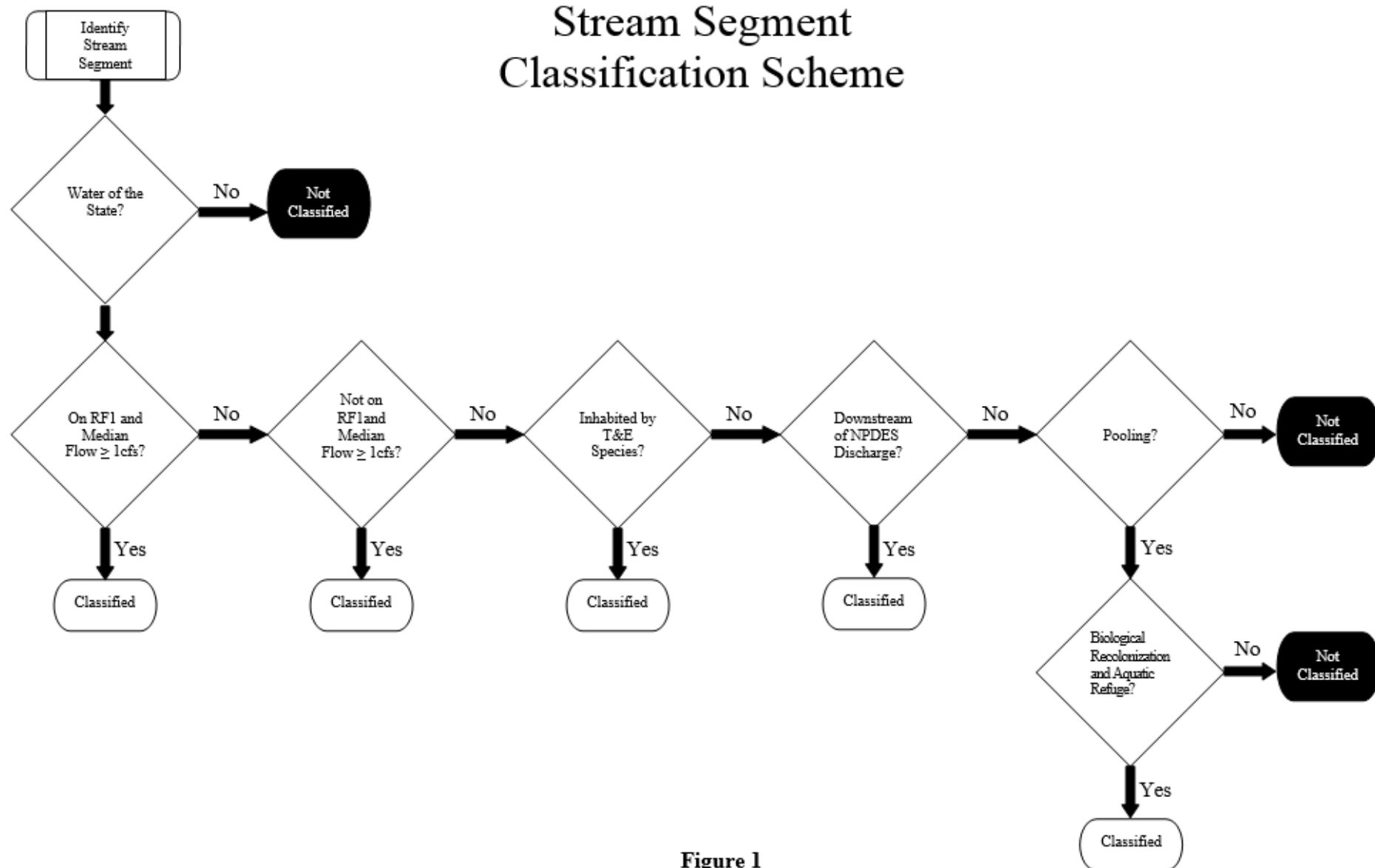


Figure 1

## **2 DESIGNATED USES**

Applicable Regulations:       K.A.R. 28-16-28d(b)  
  K.A.R. 28-16-28d(c)

The Department will assign designated uses to state surface waters by conducting a use attainability analysis following the standardized procedures. Another party, following the Department's standardized procedure, may also conduct a use attainability analysis. If conducted by another party, the use attainability analysis must be submitted to the Department for review and approval.

### **2.1 AGRICULTURAL WATER SUPPLY USE**

Surface waters used for agricultural purposes.

#### **2.1.1 Livestock watering.**

Surface waters may be used for consumption of water by livestock.

#### **2.1.2 Irrigation.**

Surface waters may be withdrawn and used for application onto cropland.

### **2.2 AQUATIC LIFE SUPPORT USE**

Waters used for the maintenance of the ecological integrity of streams, lakes and wetlands including the aquatic, semi-aquatic, or terrestrial species dependent on surface water for survival

#### **2.2.1 Special Aquatic Life Use.**

Surface waters that contain unique habitats or biota that are not commonly found in the state. Surface waters that contain populations of threatened or endangered species will be designated as special aquatic life use waters listed in rules and regulations by the Kansas Department of Wildlife and Parks or the United States Fish and Wildlife Service. The Kansas Department of Wildlife and Parks and the United States Fish and Wildlife Service will be consulted in order to determine the presence of threatened and endangered species.

If the receiving stream is designated as a special aquatic life use water, the permit limits derived will maintain existing uses and where attained, designated uses.

If the receiving surface water is designated by the State as critical habitat for threatened or endangered species, the permit limits derived will maintain water quality considered acceptable for continued propagation of the species and maintenance of its habitat.

#### **2.2.2 Expected Aquatic Life Use.**

Surface waters that contain habitats or biota found commonly in the state.



### **2.2.3 Restricted Aquatic Life Use.**

Surface waters that contain biota in limited abundance or diversity due to the physical quality or availability of habitat compared to more productive habitats in adjacent waters.

## **2.3 DOMESTIC WATER SUPPLY USE**

Surface waters that are used, after appropriate treatment, for a potable water resource. As used in these regulations, "point of diversion" is the location of a surface water intake structure used for domestic water supply or at the point of water removal from the alluvial aquifer by a well utilizing "groundwater under the influence of surface water" as defined under K.A.R. 28-15-11(cc).

## **2.4 FOOD PROCUREMENT USE**

Surface waters that are used for obtaining edible aquatic or semi-aquatic life for human consumption.

## **2.5 GROUNDWATER RECHARGE USE**

Surface waters used for replenishing useable groundwater resources.

## **2.6 RECREATIONAL USE**

Surface water used for primary or secondary contact recreation.

### **2.6.1 Primary Contact Recreation.**

Primary contact recreational use is evaluated differently for each of two main categories of waters: 1) classified surface waters other than classified stream segments, and 2) classified stream segments. For each category, the determining factor for primary contact recreation is body immersion in the water to the extent that some inadvertent ingestion of water is probable.

The primary contact recreation season is from April 1 through October 31 of each year.

#### **2.6.1.1 Classified Surface Waters Other Than Classified Stream Segments.**

Uses supported in this category include boating, mussel harvesting, swimming, skin diving, water skiing, and wind surfing. The three subcategories of primary contact recreational use for classified surface waters other than classified streams segments are:

- 1) "Primary contact recreational use: swimming beach" applies to those classified surface waters other than classified stream segments that have posted public swimming areas. During the non-recreational season, the secondary contact recreational use: public access criteria will apply.
- 2) "Primary contact recreational use: public access" applies to those classified surface waters other than classified stream segments where full body contact may occur and is by law or

written permission of the landowner open to and accessible by the public. During the non-recreational season, the secondary contact recreational use: public access criteria will apply.

- 3) “Primary contact recreational use: restricted access” applies to those classified surface waters other than classified stream segments where full body contact may occur and is not open to and accessible by the public under Kansas law. During the non-recreational season, the secondary contact recreational use: restricted access criteria will apply.

#### **2.6.1.2 Classified Stream Segments.**

The three subcategories of primary contact recreational use for classified stream segments are:

- 1) “Primary contact recreational use: class A” applies to those classified stream segments that have been designated as public swimming areas. Uses supported in this category include activities such as; kayaking, mussel harvesting, swimming, skin diving, water skiing, and wind surfing. During the non-recreational season, the secondary contact recreational use: class A criteria will apply.
- 2) “Primary contact recreational use: class B” applies to classified stream segments where moderate full body contact from activities that include kayaking, mussel harvesting, swimming, skin diving, water skiing, and wind surfing shall occur. A classified stream segment under this classification must be by law or written permission of the landowner open to and accessible by the public. During the non-recreational season, the secondary contact recreational use: class A criteria will apply.
- 3) “Primary contact recreational use: class C” applies to classified stream segments supporting boating, mussel harvesting, swimming, skin diving, water skiing, wind surfing, wading, or fishing and has infrequent full body contact under Kansas’s law, a classified stream segment in this classification is not open to and accessible by the public. During the non-recreational season, the secondary contact recreational use: class B criteria will apply.

#### **2.6.2 Secondary Contact Recreational Use.**

There are two categories for secondary contact recreational use: 1) classified surface waters other than classified stream segments and 2) classified stream segments. The determining factor for secondary contact recreational use is a lack of body immersion to the extent ingestion of surface water is not probable.

The secondary contact recreational use standards apply year round to surface waters designated for secondary contact recreational use.

##### **2.6.2.1 Classified Surface Waters Other Than Classified Stream Segments.**

This use shall include wading, fishing, trapping, and hunting. The two subcategories of secondary contact recreational use for classified surface waters other than classified streams segments are:

- 1) “Secondary contact recreational use: public access” applies to classified surface waters other than a classified stream segments that are by law or written permission of the landowner open to and accessible by the public.
- 2) “Secondary contact recreational use: restricted access” applies to classified surface waters other than a classified stream segments that by law are not open to and accessible by the public.

#### **2.6.2.2 Classified Stream Segments.**

Secondary contact recreational uses for classified stream segments are capable of supporting the recreational activities of wading, fishing, canoeing, motor boating, rafting or other types of boating. There two classes of secondary contact recreational use for classified stream segments “Secondary contact recreational use: class A” applies to classified stream segments that are by law or written permission of the landowner open to and accessible by the public.

- 1) “Secondary contact recreational use: class A” applies to classified stream segments that are by law or written permission of the landowner open to and accessible by the public.
- 2) “Secondary contact recreational use: class B” applies to classified stream segments that by law are not open to and accessible by the public.

If opposite sides of a classified stream segment have differing public access status, the designated use of the entire classified stream segment will be the assigned the highest attainable recreational use. Assignment of the higher use, however, does not grant de facto public access to both sides of such segment.

Neither primary nor secondary contact recreational use designations will apply to stream segments where the natural, ephemeral, intermittent or low flow conditions or water levels prevent primary or secondary recreational activities.

### **3 CRITERIA**

#### **3.1 BACKGROUND CONCENTRATIONS**

Applicable regulation:           K.A.R. 28-16-28e(b)(9)  
  K.A.R. 28-16-28e(d)(3)(B)

In surface waters where naturally occurring concentrations of elemental substances such as chlorides or sulfates exceed the numeric criteria given in Tables 1a, 1b, and 1c in the Kansas Surface Water Quality Standards: Tables of Numeric Criteria, the newly established numeric criteria will be the background concentration in the receiving water. Background concentrations applied as criteria will be determined only for those substances incorporated into surface waters that are released from geologic deposits and formations as a result of erosional processes or groundwater intrusions.

The background concentration of a receiving water may be established using data from STORET or data from other data bases with adequate and documented quality assurance procedures acceptable to KDHE. The background concentration will be determined using existing instream chemical parameter measurements and stream flow measurements. In instances where background concentration is approximately proportional to the flow, the background concentration will be determined using the mean concentration of instream measurements. Only those measurements gathered when stream flow is at or below 50th percentile of all stream flow values will be used to determine background concentrations. A minimum of five data points will be required to make a background concentration determination. If sufficient data is not available, then the background concentration will be established through monitoring. Samples will be collected in upstream areas representative of the receiving water, including various habitat types, and unaffected by the discharge being permitted, or other identifiable anthropogenic influences. Samples from streams will be collected as close as possible to low flow conditions. Samples from lakes will be collected outside of the regulatory mixing zone. The mean of at least five concentration observations is required to establish the background concentration. Hardness and pH data will also be gathered if the criterion is hardness or pH dependent. In instances where background concentration is not proportional to flow, a scientifically based analysis approved by the department will be required.

### 3.2 SITE-SPECIFIC CRITERIA

Applicable regulation: K.A.R. 28-16-28f(e)

A site-specific criteria determination can change the water quality aquatic life criteria for a parameter(s) in a given stream segment. A change in criteria based on a site-specific determination will not be granted to allow technology-based limits to be exceeded. The discharger requesting a site-specific determination from the criteria set via K.A.R. 28-16-28e must specifically state, in writing to KDHE, the parameters for which a site-specific determination is being sought. The request must include the scope, content and time frame for a study to gather data in support of the site-specific determination being requested. The site-specific determination study must be conducted in accordance with one of the three methods outlined in USEPA's Interim Guidance on Determination and Use of Water Effect Ratios for Metals, EPA-823-B-94-001, or other acceptable methods (background concentration determination or winter time ammonia criteria). The study may also provide supporting data establishing the chemical, physical and biological condition of the receiving water, including the number, diversity, and health of the biological resources in the stream. Studies to make a site-specific determination may also use guidelines provided in EPA's Technical Support Document for Water Quality-based Toxics Control.

To conduct a site-specific determination study, KDHE will require persons skilled in developing the necessary information needed to make a determination conduct the study. Such skills will include appropriate techniques for conducting the approved EPA methods and relevant biological studies. KDHE approval of the scope, content, and time frame of the study is required.

KDHE will conduct a forum for the public to participate in the establishment of site-specific aquatic life criteria. KDHE will invite interested parties, regional experts, and the general public to assist in the construction of the scope and content of any studies used for support or development of site-specific criteria. The public will also be invited to comment on proposed criteria through the public notice process and if deemed necessary, through a public hearing.

Normally, KDHE will allow 12 months to gather the necessary data and three additional months to assimilate and present the report. This time frame may be extended or reduced based upon the complexity of the study; weather induced delays and other contingencies outside the control of the discharger. During this time, monitoring requirements will be placed in the permit for the parameters, which will be affected by the site-specific determination. The requirements in the original permit issued prior to allowing the site-specific criteria study will remain in effect until the permit is renewed or until a final decision is made on the site-specific criteria request.

The decision and appropriate permit modifications will be public noticed and subject to review and appeal. If the request to change the site-specific criteria is not granted and the permittee is unable to meet the required limitations, the permit will be modified with a schedule of compliance.

### **3.3 NATURALLY OCCURRING CONDITIONS FOR LOW DISSOLVED OXYGEN (DO) CRITERION IN STREAMS**

Applicable regulation: Kansas Surface Water Quality Standards: Tables of Numeric Criteria 1g

Some conditions that occur naturally can cause low dissolved oxygen levels in streams. Typically, the incidence of low dissolved oxygen occurs in the summer when water temperatures are high (reducing the ability of water to retain dissolved oxygen) and stream flows are low (reducing the ability of the stream to re-aerate itself or flush or dilute any oxygen-demanding substances present in the water). At times, the introduction of natural organic materials such as during periods of leaf fall can cause low dissolved oxygen levels in some segments of streams. Additionally, ground water reaching the surface through springs and seeps may have low dissolved oxygen. Digressions from the dissolved oxygen criterion under the above conditions should be excluded for the purposes of Section 303(d) of the Federal Clean Water Act.

Natural conditions contributing to the local digression of low dissolved oxygen should be documented during the field site visit. Factors including flow conditions, ambient air and water temperatures, presence of allochthonous organic matter from wildlife or riparian vegetation, dystrophic inputs to the stream from wetland areas and extended days of cloud cover should be noted at the time of sampling. Additionally, observations and samplings of the resident aquatic life community, including fish, mussels, macroinvertebrates and other shellfish should be made at the time of deficient oxygen to ascertain possible stress on the biota or lack thereof. These ancillary data and information will be used in the Section 303(d) listing and assessment process to determine whether the incident of low dissolved oxygen can be discounted.

### **3.4 DURATION AND FREQUENCY**

Applicable regulation: K.A.R. 28-16-28e(c)

## Effective Frequency and Durations of Criteria Digressions for Indicating Impairment by Pollutants\*

<b>Designated Use ----- Pollutant Class</b>	<b>Recreation</b>	<b>Acute Aquatic Life Support</b>	<b>Chronic Aquatic Life Support</b>	<b>Domestic, Irrigation &amp; Stockwater Water Supply</b>	<b>Food Procurement</b>
Unionized Ammonia		Greater than 1 per 3 years on average	Greater than 1 per 3 years on average		
Pesticides (Priority Pollutants**)		Greater than 1 per 3 years on average	Greater than 1 per 3 years on average	Annual average concentration for domestic drinking water supply use	Greater than 1 over past 10 years
Pesticides (Non-Priority Pollutants, e.g., Atrazine, Alachlor)		Greater than 1 per 3 years on average	More than 10% of samples collected between March and October thru binomial analysis	Annual average concentration for domestic drinking water supply use	Greater than 1 over past 10 years
Organics (e.g., benzene, PCBs, phenols, toluene)		Greater than 1 per 3 years on average	Greater than 1 per 3 years on average	Greater than 1 over past 10 years	Greater than 1 over past 10 years
Metals		Greater than 1 per 3 years on average	Greater than 1 per 3 years on average; Chronic criteria applied to samples taken under stable flow conditions	Greater than 1 over past 10 years	Greater than 1 over past 10 years
Total Selenium		Greater than 1 per 3 years on average	Greater than 1 per 3 years on average; For natural background concentrations, median over past 10 years	Greater than 1 over past 10 years	Greater than 1 over past 10 years
Nitrate (plus Nitrite)				Greater than 1 over past 10 years	
Chlorophyll-a				Average of 4 or more samples over past 12 years for domestic water supply	
Salts (e.g., chloride, sulfate, fluoride, boron)		Greater than 1 per 3 years on average	More than 10% of samples thru binomial analysis; For natural background concentrations, median over past 10 years	More than 10% of samples thru binomial analysis; For natural background concentrations, median over past 10 years	
E coli Bacteria	Geometric mean of five samples collected within 30 days				
Dissolved Oxygen		Greater than 1 per 3 years on average			
pH			More than 10% of samples thru binomial analysis		
Temperature		Greater than 1 per 3 years on average			
Radionuclides				Greater than 1 over past 10 years	

\*For the purposes of assessment under Section 303(d) of the Clean Water Act, this table displays the thresholds of frequency for pollutant concentrations that exceed the numeric criteria contained within the Surface Water Quality Standards to indicate impairment of the designated uses assigned to waters of the state. Typical ambient sampling implies duration of one hour for acute criteria, 4 days for chronic criteria at stable flow and 70 years for water supply or food procurement as a lifetime average.

\*\*Priority Pollutants – A set of 126 chemical pollutants EPA regulates, and for which EPA has published analytical test methods.

## 4 WATER QUALITY STANDARDS VARIANCES

Applicable Regulations: K.A.R. 28-16-28b

K.A.R. 28-16-28f(d) through K.A.R. 28-16-28h

### 4.1 BACKGROUND

In August 2015, the Environmental Protection Agency (EPA) published 40 C.F.R. 131.14, implementing its authority under the Clean Water Act (CWA) section 101(a) and 303(c)(2) to establish requirements for water quality standard (WQS) variances. A WQS variance is a flexible mechanism of water quality protection that may be requested by an individual or group of dischargers who believe they cannot meet their current permit limit and are also uncertain whether the permit limit can ultimately be achieved. Variances establish time limited designated use and criterion, that reflects the highest attainable condition as an alternative to one or more of the criteria of K.A.R. 28-16-28e for the purposes of developing National Pollutant Discharge Elimination System (NPDES) permit limits where the underlying designated use and criterion cannot currently be met due to one of the factors cited in K.A.R. 28-16-28f(d)(1). The process of adopting WQS variance will be done according to K.A.R. 28-16-28b, K.A.R. 28-16-28f(d) and K.A.R. 28-16-28h, which adopts in part 40 C.F.R. 131.14.

The Kansas Department of Health and Environment (KDHE), the permitting authority for the state of Kansas, may adopt time-limited WQS variances for a designated use and criterion reflecting the highest attainable condition (HAC) applicable throughout the term of the WQS variance, pursuant to K.A.R. 28-16-28b(sss) and 28-16-28f(d). A WQS variance does not exempt the discharger from the requirement to comply with all other applicable technology-based effluent limitations (TBELs) or water quality-based effluent limitations (WQBELs) outside of the parameters specified in the variance. WQS variances may be adopted for a single discharger, multiple dischargers, or a water body or waterbody segment(s). Each WQS variance is considered to be a WQS and is subject to the requirements of the public participation process referenced in 40 CFR 131.14 and referenced in K.A.R. 28-16-28f(d), and defined in 40 C.F.R. 131.20.

A WQS variance may be appropriate when a facility has opportunities to improve water quality, but the timeframe is uncertain as to when the criteria will be consistently met. A WQS variance will not be adopted if the underlying designated use and criterion of the proposed WQS variance can be achieved by implementing technology-based effluent limits.

WQS variances and requests for subsequent WQS variances are initially reviewed by the KDHE Bureau of Water (BOW). If KDHE BOW supports the proposed WQS variance, it is then subject to public review and comment during the public notice process, and a public hearing as a change to the WQS. KDHE BOW will address any public comments prior to submittal to U.S. EPA Region 7 for final approval. Once EPA Region 7 has granted final approval of the WQS variance, NPDES permit(s) with the WQS variance can be issued. Each WQS variance is granted for the minimum time needed as to achieve compliance with the applicable highest attainable condition as determined by KDHE.

### 4.2 ELIGIBILITY

Person(s) requesting a WQS variance shall meet at least one of the factors included in K.A.R. 28-16-28f(d)(1).

As part of the WQS variance application or request, the requestor is to demonstrate they have assessed and considered the following factors:

- Technology-based controls are insufficient to meet WQBELs derived to meet the underlying designated use and criteria at issue in the variance,
- Ensure there is no jeopardy to threatened or endangered species,
- Ensure there is no unreasonable risk to human health, and
- Ensure the highest attainable condition applicable throughout the term of the variance does not result in any lowering of currently attained ambient water quality, consistent with 131.14(b)(1)(ii).

As an alternative to identifying qualified dischargers at the time of adoption of a WQS variance for multiple dischargers, specific eligibility requirements may be adopted in a WQS variance. Qualified permittees, approved to be included in a multiple discharger WQS variance will be listed in the Kansas Variance Register (K.A.R. 28-16-28h).

### 4.3 SUBMISSION REQUIREMENTS

WQS variance requests from a discharger(s) will include an application that will be reviewed by KDHE. WQS variance requests shall include the following information, provided by KDHE or the applicant, for consideration:

#### 4.3.1 Variance submissions to EPA.

WQS variance submission per 40 C.F.R. 131.14(b) shall include:

- 1) The pollutant(s) or water quality criterion, and the water body/waterbody segment(s) to which the WQS variance applies.
- 2) The specific discharger subject to the WQS variance. (K.A.R. 28-16-28f(d) and 40 C.F.R. 131.14(b)(1))
- 3) All the applicable requirements that represent the HAC of the water body or waterbody segment throughout the term of the WQS variance.
- 4) Provide a quantitative expression of the HAC of the water body or waterbody segment receiving the discharge. Determine if the variance is for a discharger(s)-specific or applied to a water body or waterbody segment then select the appropriate quantifiable expression described below:
  - a. A quantifiable expression for discharger(s)-specific sites will be stated as one of the options listed in this section. (40 C.F.R. 131.14(b)(1)(ii)(A)(1-3))
    - The highest attainable interim criterion; or
    - The interim effluent condition that reflects the greatest pollution reduction achievable; or
    - If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the optimization of pollutant control technologies installed at the time the WQS variance is adopted, and the adoption and implementation of a pollutant minimization plan (PMP).



- b. A quantifiable expression for a water body or waterbody segment will be stated as one of the options listed in this section. (40 C.F.R. 131.14(b)(1)(ii)(B)(1-2))
  - The highest attainable interim use and interim criterion; or
  - If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflect the greatest pollutant reduction achievable with the pollutant control technologies installed at the time of adoption of a WQS variance, and the adoption and implementation of a PMP.
- 5) A statement providing that the requirements of the WQS variance are derived from the HAC identified at the time of the adoption of the WQS variance, or a subsequent HAC identified during any reevaluation, whichever is more stringent. (40 C.F.R. 131.14(b)(1)(iii))
- 6) The term of the WQS variance. Term limits may be documented to expire on a specific date or as an interval of time after EPA-approval. (40 C.F.R. 131.14(b)(1)(iv))
- 7) A provision specifying the schedule for the reevaluation(s) using all existing and readily available information and associated public input process for a WQS variance with a term greater than five years. Reevaluations will occur no less frequently than every five years after EPA approval of the WQS variance. (40 C.F.R. 131.14(b)(1)(v))

Upon the completion of the reevaluation the results will be submitted to EPA within 30 days.

- 8) A provision that the WQS variance will no longer be the applicable water quality standard for purposes of the Federal Clean Water Act if a reevaluation consistent with the frequency specified in the WQS variance is not conducted or the results are not submitted to EPA, unless and until the reevaluation is conducted and the results are submitted to EPA. (40 C.F.R. 131.14(b)(1)(vi))

#### 4.3.2 Supporting Documentation.

Compile the appropriate supporting documentation for the type of variance being requested as required for the submission packet. Supporting documentation shall include:

- 1) Indicate if the designated use is a Federal Clean Water Act 101(a)(2) use or a non-101(a)(2) use. Based on the designated use determination include the appropriate documentation as defined in this section. Federal Clean Water Act 101(a)(2) use(s) include those uses which provide for the protection and propagation of fish, shellfish, wildlife and recreation in and on the water.
  - a. For 101(a)(2) use(s) (40 C.F.R. 131.14(b)(2)(i)(A)):
    - i. Document one of the factors listed in K.A.R. 28-16-28f(d)(1), is met, or
    - ii. List the actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities that preclude attainment of the designated use and criterion while the actions are being implemented.
  - b. For Non-101(a)(2) use(s) (40 C.F.R. 131.14(b)(2)(i)(B)) provide justification and demonstration that the use and value of the water for those uses listed in 40 CFR 131.10(a) appropriately supports the WQS variance and term.

- 2) Submit documentation demonstrating the term of the WQS variance is only as long as necessary to achieve the HAC. Such documentation will justify the term of the WQS variance by describing the pollutant control activities to achieve the HAC, including those activities identified through an associated PMP, which are to serve as milestones for the WQS variance.
- 3) A WQS variance for a water body or waterbody segment requires additional supporting documentation per 40 C.F.R. 131.14(b)(2)(i)(B)(iii), that identify and document any cost-effective and reasonable BMPs for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion.

#### **4.3.3 Submitting the WQS variance Package to EPA Region 7 Office.**

WQS variances are to be certified by the Attorney General prior to submittal to EPA Region 7. Necessary supporting documentation as defined in section 4.3.2 of this procedure will be submitted along with the WQS variance.

### **4.4 REEVALUATIONS**

WQS variances that exceed five years will be reevaluated according to the reevaluation schedule identified in the variance. The purpose of the reevaluation is to ensure that the highest attainable condition is reflected throughout the term of the variance. When a more stringent attainable condition is identified that condition will become the applicable interim WQS without additional action. Upon permit reissuance, the WQBEL will be based on the newly identified interim condition consistent with the NPDES permitting process. If the reevaluation identifies a condition less stringent than the highest attainable condition, the WQS variance will be revised and submitted to EPA for approval consistent with the Clean Water Act requirements.

Additionally, the reevaluation period allows the department to consider and evaluate changes in technology, operation or design of the existing wastewater treatment system to further optimize the treatment of wastewater and reduce the discharge of the pollutant(s) subject to the WQS variance. Incorporation of these changes will be made within the context of the permit holder's capacity to financially implement those changes and the applicability of the change to the current system of the permit holder. Such changes may include, but are not limited to:

- 1) Opportunity to irrigate the treated effluent onto adjacent agricultural, commercial or recreational land, thereby reducing or eliminating the discharge of effluent.
- 2) Employing controlled discharge operations to alter the flow and volume of effluent discharges during critical and favorable conditions in the receiving waters.
- 3) Review piping flow path to maximize the detention time of wastewater within the treatment system and construct improvements as appropriate.
- 4) Schedule desludging of the treatment system to restore retention and functionality in the treatment system.
- 5) Shield wastewater from exposure to sunlight as appropriate to support treatment capability on detained wastewater.

- 6) Construct alternative discharge structures that opportunistically access wastewaters of differing quality.
- 7) Construction of additional treatment cells, basins, raceways or polishing wetlands to enhance biological treatment or eliminate discharge of wastewater.
- 8) Construction of aeration, chemical feeds or other capacity for treating influent sewage and initiating biological removal of pollutants from the final discharging wastewater.

Other emerging technology as applicable to reduce the concentration and loads of pollutants from wastewater.

#### **4.5 SUBSEQUENT VARIANCES**

If necessary, a subsequent WQS variance may be adopted when water quality goals have not been attained within the term of the original variance or as special circumstance dictate. Subsequent variances will follow the same variance submittal process for a new variance as defined in section 2 and 3 of this procedure. (K.A.R. 28-16-28f(d) and 40 CFR 131.14(b)(1)(iv))

When requesting a subsequent WQS variance for a water body or waterbody segment, documentation detailing the extent of best management practices (BMP) implementation for nonpoint source controls to address the pollutant(s) subject to the initial WQS variance and the resulting water quality improvements is to be compiled for the submission packet and approval. (40 CFR 131.14(b)(2)(iii)(B))

#### **4.6 IMPLEMENTING WQS VARIANCES IN NPDES PERMITS**

A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements pursuant to 40 C.F.R. 122.44(d) for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit (40 C.F.R. 131.14(c)). Each NPDES permit and its conditions involving the variance will be subject to public notification and opportunity for comment as typical through the department's permitting process.

Discharger-specific and multiple discharger WQS variances will be detailed in the Kansas Variance Register per K.A.R. 28-16-28h and will be publicly accessible on the KDHE BOW Water Quality Standards website. The Kansas Variance Register will include a narrative and listing section for each approved variance adopted by Kansas. During the permit renewal process if it is found that a facility no longer requires the use of a WQS variance, the permit will be written to reflect the most current applicable criteria.

Where a permittee cannot immediately meet the WQBEL derived from the terms of a WQS variance, a permit compliance schedule or order may be issued so the permittee can remain in compliance with the NPDES permit.

Calculating the HAC alternative effluent limitations will be dependent upon the criteria included in the variance. The methods used to calculate HAC alternate effluent limitations will be presented in the appendices of section 4 of this document.

## **SECTION 4 APPENDIX A**

### **PROCEDURE to CALCULATE the HIGHEST ATTAINABLE EFFLUENT CONDITION UNDER the KANSAS AMMONIA MULTIPLE DISCHARGER VARIANCE – ALTERNATIVE AMMONIA LIMITS**

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## **Procedure to Calculate the Highest Attainable Effluent Condition under the Kansas Ammonia Multiple Discharger Variance – Alternative Ammonia Limits**

### **An Addendum to the “Kansas Eligibility Determination for Wastewater Lagoon Variances” – April, 2017**

The following procedures detail the methodology for calculating the alternative ammonia effluent limit for discharging NPDES permitted facilities that have been shown to be eligible to receive a variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(e).

1. Calculating the alternate highest attainable condition (HAC) ammonia effluent limits: Certification staff will determine the 99<sup>th</sup> percentile value from historical ammonia data or identify the highest value of recent historical effluent discharge data, this value will be utilized to set the alternate NPDES permit ammonia limit.

The following procedures detail the methodology for calculating the appropriate ammonia limit for dischargers that have been shown to be eligible to receive a variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(c).

- a. Discharger specific data:
  - i. Use the data pulled from oracle in step 3 of the *Kansas Eligibility Determination for Wastewater Lagoon Variance* form and sort the facility specific representative ammonia data by month.
    1. If monthly data are available utilize recent data from the past five years.
    2. If quarterly data are available utilize recent data from 2008 to current date.
    3. In all other cases use all available data.
    4. Do not use historic data that are not representative to the current operating conditions of the facility (e.g., facility has completed construction upgrade).
- b. Calculate ammonia limits and evaluate data:
  - i. Obtain discharger specific ammonia limits (EPA 2013 ammonia criteria).
  - ii. Compare current data with proposed monthly ammonia limits and identify violations – based on sample month.
  - iii. If there are sufficient data from the facility over the period of record from a.i. and there is  $\leq 1$  violation relative to the 2013 ammonia limits, use the new 2013 ammonia criteria for the basis of the limits (alternative limits are not necessary).
    1. Monitor monthly or quarterly with monthly limits.
  - iv. If there are sufficient data from the facility from the period of record from a.i. of this procedure and there are  $>1$  violations of the 2013 ammonia criteria, calculate the alternative ammonia limits that serve as the HAC.
  - v. If there is not a sufficient data set refer to section c.i of this procedure.

c. HAC Calculation - Alternative Ammonia Limits:

- i. Best professional judgement is to be implemented for the determination of the HAC when there is a lack of data and the 99<sup>th</sup> percentile cannot be calculated. The options are:

1. “Monitor only” until there is a sufficient data set to analyze. Monitor quarterly and recheck in 5 years during next permit renewal.

Or

2. Recommend the highest ammonia effluent value in the data set for the HAC (applicable limits). Monitor quarterly with quarterly limits applying the HAC.

- ii. If there are sufficient monthly or quarterly data calculate the 99<sup>th</sup> percentile for the HAC alternative limit.

1. In excel use the “PERCENTILE.INC” function

[=PERCENTILE.INC(X1:X15,0.99)]

a. Calculate the 99<sup>th</sup> percentile using the applicable DMR data for “Nitrogen, Ammonia Total” from 2008 to the current date.

b. KDHE reserves the right to implement best professional judgement if a data set has data that is not representative of the site, i.e. outliers due to potential human entry errors.

2. Monitor quarterly with quarterly limits applying the calculated HAC.





## APPENDIX D

### Kansas Water Quality Standards Variance Register



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# KANSAS SURFACE WATER QUALITY STANDARDS VARIANCE REGISTER



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Prepared by Kansas Department of Health and Environment  
Watershed Planning, Monitoring, and Assessment Section Bureau of Water  
Division of Environment

October 31, 2017

KANSAS SURFACE WATER QUALITY STANDARDS VARIANCE REGISTER

SECTION ONE

This consolidated list has been established per K.A.R. 28-16-28h and includes the water quality standards (WQS) variances that have been adopted by the State of Kansas and approved by the Environmental Protection Agency. Because WQS variances will vary by request this list is divided in sections based on the variance name and initial approval date. Sections will include narrative language and listing information for each approved WQS variance. The Kansas Variance Register is updated as new variances are approved or during routine permit renewal cycles, which is dependent on the type of WQS variance being implemented.

Abbreviations and Symbols:

HUC	= hydrologic unit code	a	= Secondary contact recreation stream segment is by law or written permission of the landowner open to and accessible by the public
NPDES	= National Pollutant Discharge Elimination System	b	= Secondary contact recreation stream segment is not open to and accessible by the public under Kansas law
HAC	= Highest Attainable Condition	DS	= designated for domestic water supply use
SEG	= stream segment	FP	= designated for food procurement use
AL	= designated for aquatic life	GR	= designated for ground water recharge
S	= special aquatic life use	IW	= designated for industrial water supply use
E	= expected aquatic life use water	IR	= designated for irrigation use
R	= restricted aquatic life use water	LW	= designated for livestock watering use
CR	= designated for contact recreational use	i	= individual variance
A	= Primary contact recreation stream segment is designated public swimming area	m	= multiple discharger variance
B	= Primary contact recreation stream segment is by law or written permission of the landowner open to and accessible by the public	*	= signifies a 101(a)(2) use (no asterisk signifies a non-101(a)(2) use)
C	= Primary contact recreation stream segment is not open to and accessible by the public under Kansas law	**	= no or inadequate data to calculate HAC, monitoring is recommended

The "Receiving Water Body" column of listings will be populated with the hydrologic unit code and segment number or the lake project number as identified in the "Kansas Surface Water Register" adopted by reference in K.A.R. 28-16-28g.

# KANSAS SURFACE WATER QUALITY STANDARDS VARIANCE REGISTER

## SECTION TWO

**Variance Name:** Multiple-Discharger Wastewater Lagoon Ammonia Variance

**Prepared:** October 31, 2017

**Process Description:**

The following municipal dischargers, referred to as discharger from this point forward, have been shown to be eligible, based on K.A.R. 28-16-28f(d), to receive a water quality standard variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(c), as an alternative condition serving as the basis for the operating limit within their NPDES wastewater permits. The requirements of the numeric ammonia criteria WQS variance are either the HAC identified at the time of the adoption of this variance or the HAC later identified during any reevaluation, whichever is more stringent. The interim effluent condition shall be derived as the 99th percentile value or highest value of recent historical (e.g., last five years) effluent discharge water quality data, whichever is lower. This reflects the greatest pollution reduction achievable with current pollution control technologies installed when this variance is adopted along with the adoption and implementation of the Pollutant Minimization Plan (PMP) for each discharger, thus the HAC. The HAC will be included as the permit limitations in NPDES permits of the variance recipients. Compliance with the HAC will ensure no lowering of water quality throughout the 20 year term of the variance. Reevaluation and assessment of compliance and eligibility will occur for each discharger on a five-year cycle commensurate with the reissuance of their NPDES permit during the term of the variance, including opportunity for public input through the NPDES permitting process. The term of this variance begins upon the receipt of the approval letter from EPA.

Eligibility to employ the variance to the numeric ammonia criteria will be determined through existing financial data analyzed by the department utilizing the procedures outlined in the Kansas Department of Health and Environment "Kansas Eligibility Determination for Wastewater Lagoon Variances", dated July 11, 2016, which is hereby adopted by reference. The department has confirmed the existing use by the discharger of a multi-cell wastewater lagoon system for secondary treatment. Additionally, the department has considered the growth or decline over the past ten years of the population served by the discharger's wastewater collection and treatment system. The following dischargers are found to be eligible for the ammonia variance because installing technology required to meet effluent limits based on Kansas' ammonia criteria, would result in substantial and widespread economic and social impact. During the permit renewal process, eligible dischargers will be subject to the HAC, otherwise known as the alternate NPDES permit limitation, upon confirmation of eligibility for the *Multiple-Discharger Wastewater Lagoon Ammonia Variance*.

Recipients of a variance to the numeric ammonia criteria will abide by a Pollutant Minimization Plan, issued by the department. The Pollutant Minimization Plan will include requirements that the discharger will:

- 1) retain a certified operator as required by regulations;
- 2) provide reasonable and adequate maintenance of the existing wastewater treatment lagoon system;
- 3) maintain operation and performance of the existing lagoon system to comply with secondary treatment limitations;
- 4) does not allow industrial strength wastewater containing high concentrations of nitrogen to enter the existing lagoon system through the collection system or otherwise;
- 5) monitor the depth of accumulated sludge in each lagoon cell;
- 6) plan for expansion of the lagoon system should population and its associated pollutant loading approach the rated design capacity of the existing lagoon system.

The department will evaluate the capacity of each discharger receiving a variance to incorporate any additional elements into their PMP, see the “Kansas Implementation Procedures: Surface Water Quality Standard” the Water Quality Standards Variance section, that further optimize their treatment of wastewater to further reduce discharged ammonia prior to the reissuance of the Discharger’s NPDES permit.

Failure to reevaluate compliance and eligibility of the discharger prior to the reissuance of the discharger’s NPDES permit will result in effluent limits for ammonia based on the numeric ammonia criteria, within the Kansas regulations, for the next permit limits for ammonia imposed on the discharger.

The reevaluation of the variance to the ammonia criteria shall be conducted every five years after the date of approval throughout the term of the variance. The reevaluation will use all existing and readily available information and will be made available to the public for input for up to 60 days after the completion of the reevaluation. In addition, the public will have every opportunity to provide public comment during each permit’s renewal process. The variance to the ammonia criteria will no longer be the applicable water quality standard if:

- 1) a reevaluation of the variance is not performed during a specified five year review period; or
- 2) the results of the reevaluation are not submitted to United States Environmental Protection Agency (USEPA) within 30 day of completion.

When such incidents occur the current ammonia criteria listed in the “Kansas Surface Water Quality Standards: Tables of Numeric Criteria,” as adopted by K.A.R. 28-16-28e(e), will be the applicable water quality standard until the reevaluation is completed and submitted to the USEPA.

Multiple-Discharger Wastewater Lagoon Ammonia Variance Register Discharger List

Discharger	NPDES Permit Number	KS Permit Number	Receiving Water Body		Type of Variance and Use	Pollutant / Criterion	Highest Attainable Interim Criteria Limit – Unit mg/L (May be seasonal)
			HUC8	Segment or Lake Project Name Code			
Altamont, City of	KS0045918	M-NE01-OO01	11070205	27	m*	Ammonia	n
Americus, City of	KS0047406	M-NE02-OO01	11070201	5	m*	Ammonia	n
Arma, City of	KS0045926	M-NE03-OO01	11070207	27	m*	Ammonia	n
Bern, City of	KS0047244	M-MO02-OO01	10240007	212	m*	Ammonia	n
Chetopa, City of	KS0031135	M-NE13-OO01	11070205	28	m*	Ammonia	n
Dwight, City of	KS0051675	M-NE20-OO01	11070201	30	m*	Ammonia	n
Erie, City of	KS0045977	M-NE25-OO01	11070205	15	m*	Ammonia	n
Girard, City of	KS0022551	M-NE31-OO01	11070205	44	m*	Ammonia	n

Discharger	NPDES Permit Number	KS Permit Number	Receiving Water Body		Type of Variance and Use	Pollutant / Criterion	Highest Attainable Interim Criteria Limit – Unit mg/L (May be seasonal)
			HUC8	Segment or Lake Project Name Code			
Highland, City of	KS0047457	M-MO09-OO01	10240005	339	m*	Ammonia	n
Marion, City of	KS0051691	M-NE45-OO01	11070202	3	m*	Ammonia	n
Oswego, City of	KS0047554	M-NE53-OO01	11070205	21	m*	Ammonia	n
Seneca, City of	KS0047538	M-MO19-OO01	10240007	16	m*	Ammonia	n
St. Paul, City of	KS0084174	M-NE59-OO02	11070205	LM053401	m*	Ammonia	n
Strong City, City of	KS0031178	M-NE63-OO01	11070203	19	m*	Ammonia	n
Weir, City of	KS0079146	M-NE67-OO01	11070207	26	m*	Ammonia	n
Fairview, City of	KS0098744	M-MO06-OO02	10240008	39	m*	Ammonia	n
Galena, City of	KS0048135	M-NE28-OO01	11070207	3	m*	Ammonia	n
Hillsboro, City of	KS0097896	M-NE35-OO02	11070202	456	m*	Ammonia	n
Burlingame, City of	KS0024694	M-MC07-OO01	10290101	80	m*	Ammonia	n
Lane, City of	KS0081515	M-MC19-OO01	10290101	51	m*	Ammonia	n
Mulberry, City of	KS0087467	M-MC27-OO01	10290104	324	m*	Ammonia	n
Pomona, City of	KS0029068	M-MC36-OO01	10290101	18	m*	Ammonia	n
Tipton, City of	KS0085219	M-SO42-OO01	10260014	21	m*	Ammonia	n
Russell, City of	KS0091367	M-SH31-OO02	10260006	13	m*	Ammonia	n
Delphos, City of	KS0092169	M-SO11-OO02	10260015	12	m*	Ammonia	n
Hillsdale, City of	KS0081396	M-MC60-OO01	10290102	25	m*	Ammonia	n
Lucas, City of	KS0095222	M-SA08-OO02	10260010	12	m*	Ammonia	n

Discharger	NPDES Permit Number	KS Permit Number	Receiving Water Body		Type of Variance and Use	Pollutant / Criterion	Highest Attainable Interim Criteria Limit – Unit mg/L (May be seasonal)
			HUC8	Segment or Lake Project Name Code			
Melvern, City of	KS0046027	M-MC23-OO01	10290101	42	m*	Ammonia	n
Miltonvale, City of	KS0021911	M-SH27-OO01	10260008	4	m*	Ammonia	n
Moran, City of	KS0047490	M-MC25-OO01	10290104	12	m*	Ammonia	n
Mound City, City of	KS0047503	M-MC26-OO01	10290102	33	m*	Ammonia	n
Natoma, City of	KS0031160	M-SA10-OO01	10260009	7	m*	Ammonia	n
Pleasanton, City of	KS0116653	M-MC35-OO01	10290102	46	m*	Ammonia	n
Princeton, City of	KS0093891	M-MC38-OO01	10290101	50	m*	Ammonia	n
Scranton, City of	KS0031283	M-MC44-OO01	10290101	27	m*	Ammonia	n
Eskridge, City of	KS0046400	M-MC09-OO01	10290101	27	m*	Ammonia	n
Osage City, City of	KS0022675	M-MC29-OO01	10290101	29	m*	Ammonia	n
Osborne, City of	KS0092398	M-SO29-OO02	10260014	3	m*	Ammonia	n
Plainville, City of	KS0093165	M-SA14-OO02	10290009	7	m*	Ammonia	n
Rantoul, City of	KS0048119	M-MC40-OO01	10290101	3	m*	Ammonia	n
Fontana, City of	KS0095532	M-MC10-OO01	10290102	16	m*	Ammonia	n
Williamsburg, City of	KS0093203	M-MC50-OO02	10290101	1589	m*	Ammonia	n
Glen Elder, City of	KS0020982	M-SO18-OO01	10260015	18	m*	Ammonia	n
Kensington, City of	KS0093998	M-SO21-OO02	10260012	19	m*	Ammonia	n
Oberlin, City of	KS0098655	M-UR17-OO02	10250011	4	m*	Ammonia	n
Overbrook, City of	KS0046451	M-MC32-OO01	10290101	LM028001	m*	Ammonia	n



Discharger	NPDES Permit Number	KS Permit Number	Receiving Water Body		Type of Variance and Use	Pollutant / Criterion	Highest Attainable Interim Criteria Limit – Unit mg/L (May be seasonal)
			HUC8	Segment or Lake Project Name Code			
Smith Center, City of	KS0098221	M-SO38-OO02	10260012	10	m*	Ammonia	n
WaKeeny, City of	KS0099309	M-SH38-OO02	10260007	7	m*	Ammonia	n

n - The Highest Attainable Interim Criteria Limit shall be derived as the 99th percentile value or highest value of recent historical (e.g., last five years) effluent discharge water quality data, whichever is lower. The Highest Attainable Interim Criteria Limit will be calculated when permits come up for renewal.



## APPENDIX E

Kansas Eligibility Determination for Wastewater Lagoon Variances  
July 12, 2016



## APPENDIX E

Kansas Eligibility Determination for Wastewater  
Lagoon Variances  
July 12, 2016



**Kansas Eligibility Determination for Wastewater Lagoon Variance - Ammonia**  
**July 12, 2016**

Prepared by: \_\_\_\_\_

Date Prepared: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date accepted: \_\_\_\_\_

Name of Interested City: \_\_\_\_\_

County City Resides in: \_\_\_\_\_

2. Assess:

- a. Review NPDES permit to determine if the discharger can meet the new ammonia criteria.
- b. Assess the historical ammonia effluent data and compare to the projected 2013 ammonia criteria limits; compare the data sets to determine if the discharger can meet the required ammonia limitations. If the sample data presents >1 violations over the period of record compared to the relative 2013 ammonia limits, then the facility can proceed to the financial eligibility calculation, if not then reissue the permit with new limits based on the 2013 ammonia criteria.
- c. The discharger can meet the new ammonia criteria: ☐ Yes ☐ No ☐ More data needed

If the historical effluent data from the period of record exceeds the projected 2013 ammonia criteria limits in two or more samples then complete this form in its entirety.

3. Go to the US Census Bureau's website (below) to locate the following information

[http://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml)

a. City Population: \_\_\_\_\_ Date of Census: \_\_\_\_\_

b. Median Household Income (MHI) under the income tab on the right: \$ \_\_\_\_\_

Date of Census: \_\_\_\_\_

c. State MHI: \_\_\_\_\_

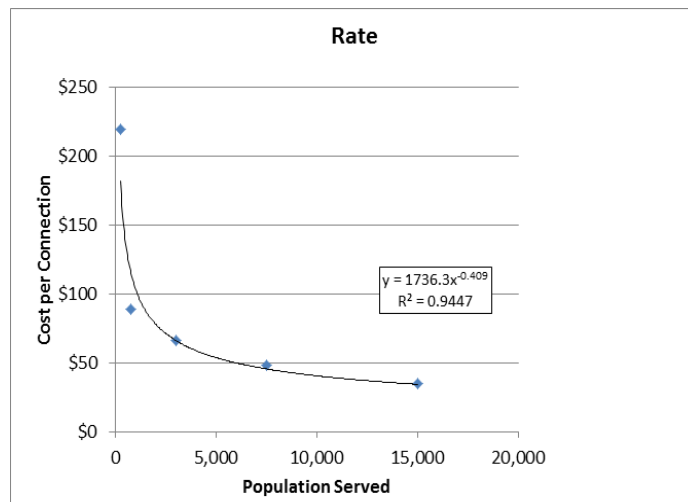
4. Calculate cost of mechanical plant: \$ \_\_\_\_\_ per connection per month

$$y = 1736.3x^{-0.409} \text{ where } x \text{ is the population of the town}$$

The equation used to calculate the cost of a new mechanical plant as derived from a set of cost data provided by Tetra Tech in their Report *Kansas Lagoon Upgrades to Meet Water Quality Standards for Ammonia*. KDHE utilized the cost per facility (Located in Table 15 within the report) and plotted that against the population serviced by that sized facility. Calculating the cost per connection by

population serviced gives a more accurate and relatable expense that will be incurred by the rate payers. The result can be found in Figure 1.

Figure 1: Rate Curve



5. Calculate the percent of (the city's annual) MHI that city sewer utility residential customers would be paying to fund a new mechanical plant (this is the municipal primary screener): \_\_\_\_\_ %

$$\frac{(\text{Cost of mechanical plant (step 3)} \times 12)}{\text{MHI}} \times 100\% = \text{Cost of new plant as a Percent of MHI}$$

If the municipal primary screener exceeds 4.0% then you may stop here and not continue on to calculate the secondary indicators. Proceed to calculate alternative ammonia effluent limit (go to step 17). Table 2.2 – Assessment of the Substantial Impacts Matrix – if the Economic Guidance (see section 16 of this form) indicates that the primary indication (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, a level of 100% greater than the 2% MHI will be utilized. The 4% value represents a threshold level where completion of the secondary economic test is expected to be unnecessary expenditure of resources.

6. First (to find the county unemployment) go to <https://klic.dol.ks.gov/gsipub/index.asp?docid=402> and select the most recent month available. This will direct you to a map of Kansas with all unemployment rates for each county as a whole, find the county in which the city of interest resides.

a. County Unemployment rate: \_\_\_\_\_ % Date: \_\_\_\_\_ / \_\_\_\_\_

Go to <http://data.bls.gov/timeseries/LNS14000000> and scroll to the bottom and find the unemployment rate for the month and year that matches the most recent KS County data you obtained above.

b. National Unemployment rate: \_\_\_\_\_ % Date: \_\_\_\_\_ / \_\_\_\_\_



7. Go to the Department of Administration's website (below) and click on the link for the "Cities" most recent **completed** fiscal year's municipal budgets <https://admin.ks.gov/offices/chief-financial-officer/municipal-services/municipal-budgets> chose the city you're working with and download their budget. If you cannot find their budget you may need to go back one fiscal year. Open/Save the file and look for the following data:

- a. Total assessed valuation: \$\_\_\_\_\_ Date:\_\_\_\_\_
- b. The assessed valuation is typically 14% of the Full Market Value of Taxable Property in a small Kansas town.

Calculate Full Market Value of Taxable Property: \$\_\_\_\_\_

$$\frac{\text{Total Assessed Valuation}}{0.14} = \text{Full Market Value of Taxable Property}$$

- c. Property Tax: To calculate the property tax value use the Property Tax spread sheet form in the Master Flow Template and county tax levy sheet found at <https://admin.ks.gov/offices/chief-financial-officer/municipal-services/county-tax-levy-sheets> for the most recent year and correct county:

\$\_\_\_\_\_ Date:\_\_\_\_\_

- d. Delinquent Tax Rate:\_\_\_\_\_ % Date:\_\_\_\_\_

- e. Total Bond Value (if any can be found under the Statement of Indebtedness): \$\_\_\_\_\_

- i. Bond Value: \$\_\_\_\_\_ Year of Issue:\_\_\_\_\_ Bond Type:\_\_\_\_\_
- ii. Bond Value: \$\_\_\_\_\_ Year of Issue:\_\_\_\_\_ Bond Type:\_\_\_\_\_
- iii. Bond Value: \$\_\_\_\_\_ Year of Issue:\_\_\_\_\_ Bond Type:\_\_\_\_\_
- iv. Bond Value: \$\_\_\_\_\_ Year of Issue:\_\_\_\_\_ Bond Type:\_\_\_\_\_

- f. Total Debt (usually on the last page found in the NOTICE OF HEARING at the bottom):

\$\_\_\_\_\_ Date:\_\_\_\_\_

Within the budget if the town holds any bonds or other debt or school district debts you will need to go through step 7 and find if the town has a bond rating. If they do not have a bond rating check the box in 7b and proceed to step 8.

8. Bond Rating: Go to <http://emma.msrb.org/Main/QuickSearch> and type the city name into the search bar and click the green arrow. The search will only return a link if the city holds any bonds. Click on the city name. If the city has a bond rating (not all cities that issued bonds have a rating) it can be found in the far left column.

- a. Overall Bond Rating:\_\_\_\_\_ Date:\_\_\_\_\_

- b. ☐ No Bond Issue Information Provided

9. Calculate the number of rate payers: \_\_\_\_\_

$$\text{rate payers} = \text{population} \div 2.5$$

10. Calculate the percent difference between the State MHI (2c) and City's MHI (2b): \_\_\_\_\_ %  
When the percent difference value is greater than 10% below the State MHI and is a positive value it is representing a City MHI below State MHI. When the percent difference value is greater than 10% above the State MHI the value will be negative and it is representing a City MHI above the State MHI.

$$\frac{\text{State MHI} - \text{City MHI}}{\text{State MHI}} \times 100\% = \text{Percent Difference}$$

11. Calculate the difference between County's unemployment rate (5a) and the National unemployment rate (5b): \_\_\_\_\_ %

$$\text{County Unemployment} - \text{National Unemployment} = \text{Difference}$$

12. Calculate Property tax as a percent of full market value of all taxable property: \_\_\_\_\_ %

$$\frac{\text{Property Tax (6c)}}{\text{Full Market Value of Taxable Properties (6b)}} \times 100\% = \text{Property tax as a percent of Valuation}$$

13. Calculate overall debt as a percentage to full market value of all taxable property: \_\_\_\_\_ %

$$\frac{\text{Overall Debt (6f)}}{\text{Full Market Value of Taxable Property (6b)}} \times 100\% = \text{Debt as a percent of Full Market Value of Taxable Property}$$

14. Calculate Property Tax Collection Rate: \_\_\_\_\_ %

$$100\% - \text{Delinquent Tax Rate (6d)} = \text{Property Tax Collection Rate}$$

15. *Economics Test: All the calculations have been completed; take the values calculated and see where they fall on the table below to find the secondary indicators.*

Find where the calculated values fall on each of the rows, follow the column down to the bottom of the table and the large value (1, 2, or 3) below is the secondary indicator. Record the secondary indicator in the space provided below. If the value does not fall anywhere in the table provided (i.e.: no bond rating) give the item a secondary indicator of zero (0).

When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently the most recent rating for a sewer bond should be used. Recent bond rating are included in municipal bond reports from rating agencies (e.g., *Moody's Bond Record*, *Standard and Poor's Corporation*).

See next page for Secondary Indicators tables and calculations.

## SECONDARY INDICATORS

	Secondary Indicators		
Indicator	Weak	Mid-Range	Strong
Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) or Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2%-5%	Below 2%
Unemployment	More than 1% above National Average	National Average	More than 1% below National Average
Median Household Income	More than 10% below State Median	State Median	More than 10% above State Median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2%-4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	>98%

Secondary Indicator Value

**1**

**2**

**3**

	Value	Secondary Indicator
Bond Rating (step 7a)		
Overall Net Debt as Percent to full market value of taxable property (Step 12)		
Unemployment (Step 10) – <i>difference between County and National unemployment rates</i>		
Median House Hold Income (Step 9) - % <i>difference between State and City MHI (a positive value represents a City MHI below the State MHI and a negative value represents a City MHI above the State MHI)</i>		
Property Tax Revenues as a Percent of Full Market Value of Taxable Property (Step 11)		
Property Tax Collection Rate (Step 13)		

Average Value of Secondary Indicator: \_\_\_\_\_

When there are six secondary indicators identified calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Six Secondary Indicators}}{6}$$

When there are five secondary indicators identified (no bond rating) calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Five Secondary Indicators}}{5}$$

16. *Assessment of Substantial Impacts (Matrix): Use below provided table to determine the feasibility of proposing a mechanical plant.*

Use calculated Annual User Charge per Residential Customer Percent of MHI value (Step 13) to find where the value falls within the three vertical columns and the average the secondary score (calculated above) to find where which row applies to the city of choice.

### ASSESSMENT OF SUBSTANTIAL IMPACTS MATRIX

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	X
Greater than 2.5	✓	✓	?

Secondary Score: \_\_\_\_\_

Key:

**?** Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

**X** No, the city cannot afford the proposed mechanical plant and the variance can be granted.

**✓** Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

**Conclusion:** The City (check the answer that best applies):

- ☐ can afford the proposed mechanical treatment facility
- ☐ cannot afford the proposed mechanical treatment facility
- ☐ it is uncertain a city can afford the proposed mechanical treatment facility; additional studies are needed.

If the City cannot afford the proposed mechanical treatment facility then proceed to step 17, calculating the alternative ammonia effluent limits.

If it is uncertain as to whether the facility can afford the proposed mechanical plant, proceed by issuing the permit with a temporary variance requiring further study and including the alternate ammonia effluent limits.

17. When a discharger cannot meet the EPA 2013 ammonia criteria limits calculate the highest attainable condition (HAC) alternate limits. Alternate ammonia HAC limits will be derived as the 99th percentile or the highest value of recent historical effluent discharge data, whichever is lower. The procedure to calculate the alternate ammonia HAC limits are presented in the Master Flow template on worksheet E. Information from section 1 of this form may be used in this section.
18. Include a pollution minimization plan (PMP) in each NPDES permit for dischargers who qualify for the Ammonia MDV, or which later qualify for an individual variance after further studies are performed. See the Kansas Variance Register and the Kansas Surface Water Implementation Procedure for details on the PMP.



## APPENDIX F

### Procedure to Calculate the Highest Attainable Condition under the Multiple-Discharger Wastewater Lagoon Ammonia Variance

**An Addendum to the “Kansas Eligibility Determination for  
Wastewater Lagoon Variances - Ammonia” – July 12, 2016**





# **Procedure to Calculate the Highest Attainable Condition under the Kansas Ammonia Multiple Discharger Variance – Alternative Ammonia Limits**

## **An Addendum to the “Kansas Eligibility Determination for Wastewater Lagoon Variances” – April 10, 2017**

The following procedures detail the methodology for calculating the alternative ammonia effluent limit for discharging NPDES permitted facilities that have been shown to be eligible to receive a variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(e).

1. Calculating the alternate highest attainable condition (HAC) ammonia effluent limits: Certification staff will determine the 99<sup>th</sup> percentile value from historical ammonia data or identify the highest value of recent historical effluent discharge data, this value will be utilized to set the alternate NPDES permit ammonia limit.

The following procedures detail the methodology for calculating the appropriate ammonia limit for dischargers that have been shown to be eligible to receive a variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(c).

- d. Discharger specific data:
  - i. Use the data pulled from oracle in step 3 of the *Kansas Eligibility Determination for Wastewater Lagoon Variance* form and sort the facility specific representative ammonia data by month.
    1. If monthly data are available utilize recent data from the past five years.
    2. If quarterly data are available utilize recent data from 2008 to current date.
    3. In all other cases use all available data.
    4. Do not use historic data that are not representative to the current operating conditions of the facility (e.g., facility has completed construction upgrade).
- e. Calculate ammonia limits and evaluate data:
  - i. Obtain discharger specific ammonia limits (EPA 2013 ammonia criteria).
  - ii. Compare current data with proposed monthly ammonia limits and identify violations – based on sample month.
  - iii. If there are sufficient data from the facility over the period of record from a.i. and there is  $\leq 1$  violation relative to the 2013 ammonia limits, use the new 2013 ammonia criteria for the basis of the limits (alternative limits are not necessary).
    1. Monitor monthly or quarterly with monthly limits.
  - iv. If there are sufficient data from the facility from the period of record from a.i. of this procedure and there are  $>1$  violations of the 2013 ammonia criteria, calculate the alternative ammonia limits that serve as the HAC.
  - v. If there is not a sufficient data set refer to section c.i of this procedure.

f. HAC Calculation - Alternative Ammonia Limits:

- i. Best professional judgement is to be implemented for the determination of the HAC when there is a lack of data and the 99<sup>th</sup> percentile cannot be calculated. The options are:
  1. “Monitor only” until there is a sufficient data set to analyze. Monitor quarterly and recheck in 5 years during next permit renewal.  
Or
  2. Recommend the highest ammonia effluent value in the data set for the HAC (applicable limits). Monitor quarterly with quarterly limits applying the HAC.
- ii. If there are sufficient monthly or quarterly data calculate the 99<sup>th</sup> percentile for the HAC alternative limit.
  1. In excel use the “PERCENTILE.INC” function  
[=PERCENTILE.INC(X1:X15,0.99)]
    - a. Calculate the 99<sup>th</sup> percentile using the applicable DMR data for “Nitrogen, Ammonia Total” from 2008 to the current date.
    - b. KDHE reserves the right to implement best professional judgement if a data set has data that is not representative of the site, i.e. outliers due to potential human entry errors.
  2. Monitor quarterly with quarterly limits applying the calculated HAC.

## **APPENDIX G**

### **Kansas Eligibility Determination for Wastewater Lagoon Variances - Ammonia Permit Writer Implementation Procedure**

**An Addendum to the “Kansas Eligibility Determination for  
Wastewater Lagoon Variances - Ammonia”**



# **Kansas Eligibility Determination for Wastewater Lagoon Variances - Ammonia Permit Writer Implementation Procedure**

## **An Addendum to the “Kansas Eligibility Determination for Wastewater Lagoon Variances”**

The following procedures detail the process used by the permit writers for completing the *Kansas Eligibility Determination for Wastewater Lagoon Variances-Ammonia* a component of the *Multiple-discharger Wastewater Lagoon Ammonia Variance*. This process will assess if a discharger qualifies for the multiple-discharger variance (MDV) by screening site specific historical wastewater effluent discharge data. If a site is deemed qualified for the MDV based on the results of the screening of the data the permit writer will then calculate economic impact and determine financial eligibility. Completing this procedure along with the *Procedure to Calculate the Highest Attainable Condition under the Kansas Ammonia Multiple-Discharger Variance* will determine a discharger's eligibility.

Eligibility determination must begin one year in advance to the reissuance of a NPDES wastewater lagoon treatment permit. The renewal application is sent out nine months prior to the expiration date of the permit. Three months prior to Technical Service Section (TSS) sending out the permit renewal application the eligibility determination process must be started. This will allow for the financial review and pre-variance certification processes to be completed nine months prior to the permit expiration date. If it is determined that a discharger qualifies for the *Multiple-discharger Wastewater Lagoon Ammonia Variance* the affidavit to accept the variance must be included as a component of the permit renewal application sent to the permittee.

2. To initiate the eligibility determination process the TSS will submit a list of dischargers to be screened to the Municipal Programs Section Chief and the Planning and Standards Unit Manager. The Municipal Programs Section Chief and the Planning and Standards Unit Manager will then make assignments to the permit writers and certification personnel to complete the screening process.
  - a. The TSS will download applicable discharge monitoring report (DMR) data for “Nitrogen, Ammonia Total” from 2008 to the current date for each discharger on the list and will submit this detail with the list to the Municipal Programs Section Chief and the Planning and Standards Unit Manager.
  - b. Permit writers will graph the historical ammonia data upon receipt.
  - c. Alternately, when necessary, the permit writer can download the DMR Data for Nitrogen, Ammonia Total from 2008 to the current date and graph the data. To download data complete the following steps:
    - i. Open internet explorer and go to [http://oraapp/forms/frmservlet?form=D:/OraForms/WT/WTMAINMENU\\_fm&buffer\\_records=NO&debug\\_messages=NO&array=NO&query\\_only=NO&quiet=YES&RENDER=YES&LookAndFeel=Oracle](http://oraapp/forms/frmservlet?form=D:/OraForms/WT/WTMAINMENU_fm&buffer_records=NO&debug_messages=NO&array=NO&query_only=NO&quiet=YES&RENDER=YES&LookAndFeel=Oracle) enter your log in username and password and ENVI for the database.

- ii. Search for facility by permit number.
- iii. Select the correct facility by clicking on the permit number in the Perm No field.

Perm No	Fac Name	Npdes No	Fac City	Dist	Only	Active
M-KS03-0002	AUBURN, CITY OF	KS0094650	AUBURN	NE	SN	A

Total Found: 1      Convert to Excel      View Only

- iv. Click on Reports from the drop down menu, then DMRs and DMR Recall Both (>=2008).

Back Print Reports HELP Window

Waste Wtr Limits 3-0002 Facility Name: AUBURN, CITY OF

Main DMRs Districts Report

Address Inspections DMR Recall - Both (>=2008) DMR Recall - Both (<2008)

Facility Name KS. Permit ID NPDES ID

AUBURN, CITY OF M-KS03-0002 KS0094650

Facility City District County Reporting Frequency Effective Date Expiration Date

AUBURN NE SN JAN-APR-JUL-OCT 20151001 20200930

Trmt Ind Major Permit Fee Pre

Type Type Flag Fee Due Treat

04 N 185 1130 N

Facility Design Flow Units Basis Facility Actual Flow Units Basis Facility Last Updated Date

.1714 MGD MGD 20150811

Oper Class SIC 1 SIC 2 Reissue ICIS PMT DMR Facility Short Name

1 4952 Y Y Y AUBURN WWTP

# Ext. # Int. Owner SWP3 SWP3 SWP3 Next Inspection

Outfalls Outfalls Type Req. Due Date Rcvd Inspection Interval

1 PUB N 20191027 MINOR60

Update Abort DeCode <F2> tab menu

- v. Select “Nitrogen, Ammonia Total” (Parm Long Name) or “NH<sub>3</sub>” (Parm Short Name) and choose to exclude flow, then select View Both.

KDHE BOW - Waste Water Recall Form

Recall By Query View DMRs View EDMRs View Both

NPDES # KS. Permit No. Outfall No.

Major Flag Facility Type Treatment Type Industrial Type District County River Basin

ALL ALL ALL ALL ALL ALL ALL

Parm # Parm Short Name Parm Long Name Exclude Flow

ALL ALL NITRATE + NITRITE ANNUAL AVERAGE

From Date: NITRATE AND NITRITE, TOTAL

NITRATE+NITRITE - MONTHLY AVG

NITROGEN, AMMONIA DISSOLVED

NITROGEN, AMMONIA TOTAL

NITROGEN, KJELDAHL TOTAL

NITROGEN, NITRATE TOTAL

NITROGEN, NITRITE TOTAL

View

- vi. The data will appear on the screen, on the right side of the screen there will be a button with the option to export to Excel, click on the “To Excel” button. A message will then pop up that asks if you would like to “Open,” “Save” or “Save as” the report, choose “Open.”

- If sample data presents  $>1$  violation relative to the 2013 ammonia limits, then proceed to the financial eligibility calculation for the facility. If the data presents  $1 \leq$  violation issue the permit with the 2013 ammonia limits.

- c. If there is a limited amount of available data between 2008 and the current date (for example, less than two monitoring results per quarter over the 5-10 year period and/or more results which are low values), the permit writer has the ability to use their discretion to bypass a limit and require “Monitoring Only” for the given permit cycle.
- 9. In the permit, present the alternate HAC ammonia effluent limit, best management practices, and the pollutant minimization plan (PMP) that will address the requirements the discharger must comply with to minimize the level of ammonia being released. Requirements of the PMP may include, but are not limited, to the following:
  - a. Facilities that serve a population over 2,000 people must monitor ammonia monthly.
  - b. Retain a certified operator as required by regulations.
  - c. Provide reasonable and adequate maintenance of the existing wastewater treatment lagoon system.
  - d. Does not allow industrial strength wastewater containing high concentrations of nitrogen to enter the existing lagoon system through the collection system or otherwise.
  - e. Monitor the depth of accumulated sludge in each lagoon cell.
  - f. Plan for expansion of the lagoon system should the population and its associated pollutant loading approach the rated design capacity of the existing lagoon system.

The department will evaluate the capabilities of each discharger receiving a variance to incorporate any additional elements into their PMP to further optimize the treatment of wastewater and reduce the discharge of ammonia prior to the reissuance of the facility's NPDES permit. (Additional details may be found in the Water Quality Standards Variance section of the “*Kansas Implementation Procedures: Surface Water Quality Standard*”.)

- 10. Notify other permit review staff of recommendation to place MDV HAC alternate ammonia limits and best management practices into facility permit by email. Municipal Programs Section Chief and/or other permit review staff will notify facility owner of MDV decision. (Note: Owner will have submitted the MDV affidavit to accept the variance with the permit renewal application.)
- 11. Forward draft of the new permit with MDV HAC alternate ammonia limits and best management practices for public notice.



## APPENDIX H

### Eligibility Analysis Examples - Highest Attainability Analysis and Economic Impact Analysis

- Multiple-discharger Wastewater Lagoon Ammonia Variance Master Work Flow Process and Outline
- Example 1 – Argonia, Kansas, Preliminary Screener >4%
- Example 2 – Rossville, Kansas, Preliminary >2%
- Example 3 – Cheney, Kansas, Preliminary Screener Between 1.0% and 2.0%

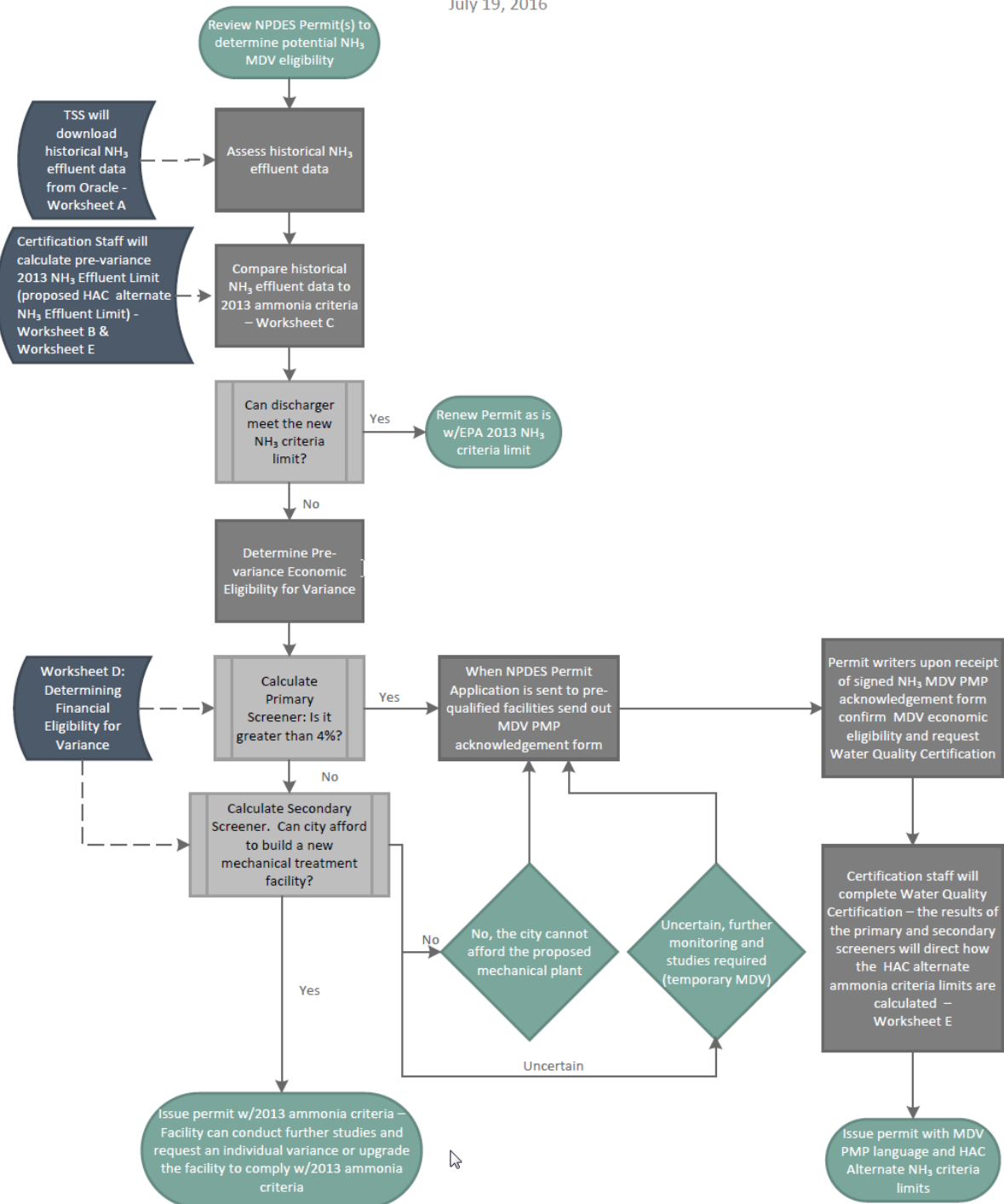
Note: There is no prepared example for those who did not qualify for the variance since the terms of the variance were not met via the prescreening process.



# Multiple-discharger Wastewater Lagoon Ammonia Variance Master Work Flow Process and Outline

## Multiple-Discharger Wastewater Lagoon Ammonia Variance Master Work Flow Process

KDHE BOW Technical Services, Municipal Programs and Watershed Planning, Monitoring & Assessment Sections  
July 19, 2016



\* Note: How the HAC alternate NH3 criteria limit is calculated is determined by the secondary screener as defined in worksheet D and the KDHE Kansas Eligibility Determination Wastewater Lagoon Variance – Ammonia Certification Process Implementation Procedure Addendum.



**Kansas Eligibility Determination**  
**Multiple-Discharger Wastewater Lagoon Ammonia Variance**  
*An outline for the procedure from start to finish.*

Step 1: *Worksheet A* **Ammonia Effluent Limits** (EPA 2013 Criteria)

Based on the K.A.R. 28-16-28e (mg/L)

Data Presented in a table and graph for Jan – Dec

Step 2: *Worksheet B* **Ammonia Effluent History**

Ammonia Data, retrieved from Oracle for previous 5 years

Data presented in a table and graph for Jan – Dec

(Note: All NPDES permits for cities with populations over 2,000 are now being revised to require monthly monitoring frequency.)

Step 3: *Worksheet C* **Comparison of Data**

Comparing the effluent limitation data from worksheet A and the historical data from worksheet b a decision can be made if the facility can meet the required ammonia limitations.

Does the historical ammonia data exceed the current limitations?

NO: If the historical effluent data is below the required limits then the facility does NOT need a variance and the permit for the facility can be issued with the current (EPA 2013 ammonia criteria) water quality based effluent limits (WQBEL) with a letter on Best management Practices and Stipulations.

YES: If the historical effluent data exceeds the required limits then the process to check eligibility for a variance will continue. Proceed to the next step.

Step 4: *Worksheet D* **Determining Financial Eligibility for Variance**

Determine the financial eligibility for variance of a given facility by comparing the cost of building a mechanical plant and the financial ability of the city in which the lagoon resides.

Cost of Compliance by way of constructing a new plant: Primary Screener

Primary screener > 4%: Proceed to Step 6 *Worksheet E* **Determining Alternative Ammonia Limits**

Primary Screener < 4%: Continue further within *Worksheet D* to complete Secondary Screener. The worksheet will calculate the financial ability of a city to build a new plant once all the required data is input into the worksheet.

Does the city have the ability to fund a new mechanical treatment facility?

YES: Issue permit with WQBELs and a Schedule of Compliance (SOC) for a consulting engineering firm to develop an engineering report to recommend improvements, determine costs, and double check the financial ability for a new facility to consider an individual variance.

NO: Proceed to the next step, *Worksheet E*

**Step 5: *Worksheet E* Determine Highest Attainable Condition Alternative Ammonia Limits**

Determine the 99<sup>th</sup> percentile value from historical ammonia data or identify the highest value of recent historical effluent discharge data, this value will be utilized to set the alternate NPDES permit ammonia limit.

The following procedures detail the methodology for calculating the appropriate ammonia limit for dischargers that have been shown to be eligible to receive a variance to the numeric ammonia criteria, identified by K.A.R. 28-16-28e(c).

Reference the KDHE Kansas Eligibility Determination Wastewater Lagoon Variance – Ammonia Certification Process Implementation Procedure Addendum for details on determining and calculating highest attainable condition alternative ammonia criteria limits.

Example 1 - Argonia, Kansas, Municipal  
Preliminary Screener >4





**Kansas Eligibility Determination for Wastewater Lagoon Variance - Ammonia**  
**July 12, 2016**

Prepared by: Frank Weinhold

Date Prepared: November 10, 2016

Reviewed by: \_\_\_\_\_

Date accepted: \_\_\_\_\_

Name of Interested City: Argonia

County City Resides in: Sumner

1. Assess:

- a. Review NPDES permit to determine if the discharger can meet the new ammonia criteria.
- b. Assess the historical ammonia effluent data and compare to the projected 2013 ammonia criteria limits; compare the data sets to determine if the discharger can meet the required ammonia limitations. If the sample data presents >1 violations over the period of record compared to the relative 2013 ammonia limits, then the facility can proceed to the financial eligibility calculation, if not then reissue the permit with new limits based on the 2013 ammonia criteria.
- c. The discharger can meet the new ammonia criteria: ☐ Yes ☒ No

If the historical effluent data from the period of record exceeds the projected 2013 ammonia criteria limits in two or more samples then complete this form in its entirety.

2. Go to the US Census Bureau's website (below) to locate the following information

[http://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml)

a. City Population: 489 Date of Census: 2010

b. Median Household Income (MHI) under the income tab on the right: \$ 40,000.00

Date of Census: 2010-2014

c. State MHI: \$51,872.00

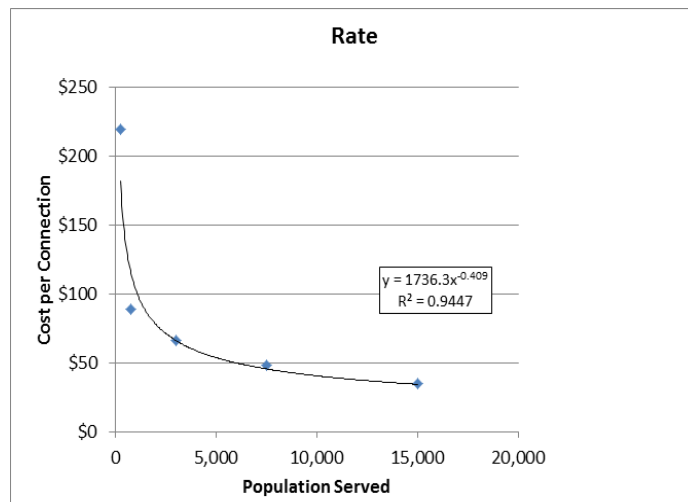
3. Calculate cost of mechanical plant: \$ 137.94 per connection per month

$$y = 1736.3x^{-0.409} \text{ where } x \text{ is the population of the town}$$

The equation used to calculate the cost of a new mechanical plant as derived from a set of cost data provided by Tetra Tech in their Report *Kansas Lagoon Upgrades to Meet Water Quality Standards for Ammonia*. KDHE utilized the cost per facility (Located in Table 15 within the report) and plotted that against the population serviced by that sized facility. Calculating the cost per connection by

population serviced gives a more accurate and relatable expense that will be incurred by the rate payers. The result can be found in Figure 1.

Figure 1: Rate Curve



4. Calculate the percent of (the city's annual) MHI that city sewer utility residential customers would be paying to fund a new mechanical plant (this is the municipal primary screener): 4.14 %

$$\frac{(\text{Cost of mechanical plant (step 3)} \times 12)}{\text{MHI}} \times 100\% = \text{Cost of new plant as a Percent of MHI}$$

If the municipal primary screener exceeds 4.0% then you may stop here and not continue on to calculate the secondary indicators. Proceed to calculate alternative ammonia effluent limit (go to step 17). Table 2.2 – Assessment of the Substantial Impacts Matrix – if the Economic Guidance (see section 16 of this form) indicates that the primary indication (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, a level of 100% greater than the 2% MHI will be utilized. The 4% value represents a threshold level where completion of the secondary economic test is expected to be unnecessary expenditure of resources.

5. First (to find the county unemployment) go to <https://klic.dol.ks.gov/gsipub/index.asp?docid=402> and select the most recent month available. This will direct you to a map of Kansas with all unemployment rates for each county as a whole, find the county in which the city of interest resides.

a. County Unemployment rate: 4.2 % Date: September / 2016

Go to <http://data.bls.gov/timeseries/LNS14000000> and scroll to the bottom and find the unemployment rate for the month and year that matches the most recent KS County data you obtained above.

b. National Unemployment rate: 5.0 % Date: September / 2016

6. Go to the Department of Administration's website (below) and click on the link for the "Cities" most recent **completed** fiscal year's municipal budgets <https://admin.ks.gov/offices/chief-financial->

[officer/municipal-services/municipal-budgets](#) chose the city you're working with and download their budget. If you cannot find their budget you may need to go back one fiscal year. Open/Save the file and look for the following data:

- a. Total assessed valuation: \$13,970,384.17 Date: 2015
- b. The assessed valuation is typically 14% of the Full Market Value of Taxable Property in a small Kansas town.

Calculate Full Market Value of Taxable Property: \$ 99,788,458.36

$$\frac{\text{Total Assessed Valuation}}{0.14} = \text{Full Market Value of Taxable Property}$$

- c. Property Tax: To calculate the property tax value use the Property Tax spread sheet form in the Master Flow Template and county tax levy sheet found at <https://admin.ks.gov/offices/chief-financial-officer/municipal-services/county-tax-levy-sheets> for the most recent year and correct county:

\$ 2,241,212.85 Date: 2015

- d. Delinquent Tax Rate: 0 % Date: 2015
- e. Total Bond Value (if any can be found under the Statement of Indebtedness): \$ \_\_\_\_\_
  - i. Bond Value: \$ 20,000 Year of Issue: 2013 Bond Type: Munis
  - ii. Bond Value: \$ 20,000 Year of Issue: 2014 Bond Type: Munis
  - iii. Bond Value: \$ 25,000 Year of Issue: 2015 Bond Type: Munis
  - iv. Bond Value: \$ Year of Issue: Year of Issue: Bond Type:
- f. Total Debt (usually on the last page found in the NOTICE OF HEARING at the bottom):  
\$ 949,261.00 Date: 2015

Within the budget if the town holds any bonds or other debt or school district debts you will need to go through step 7 and find if the town has a bond rating. If they do not have a bond rating check the box in 7b and proceed to step 8.

- 7. Bond Rating: Go to <http://emma.msrb.org/Main/QuickSearch> and type the city name into the search bar and click the green arrow. The search will only return a link if the city holds any bonds. Click on the city name. If the city has a bond rating (not all cities that issued bonds have a rating) it can be found in the far left column.

- a. Overall Bond Rating: NA Date: \_\_\_\_\_
- b. ☐ No Bond Issue Information Provided

8. Calculate the number of rate payers: 195.6

$$\text{rate payers} = \text{population} \div 2.5$$

9. Calculate the percent difference between the State's MHI (2c) and City's MHI (2b): 22.89 %  
When the percent difference value is greater than 10% below the State MHI and is a positive value it is representing a City MHI below State MHI. When the percent difference value is greater than 10% above the State MHI the value will be negative and it is representing a City MHI above the State MHI.

$$\frac{\text{State MHI} - \text{City MHI}}{\text{State MHI}} \times 100\% = \text{Percent Difference}$$

10. Calculate the difference between County's unemployment rate (5a) and the National unemployment rate (5b): -0.8 %

$$\text{County Unemployment} - \text{National Unemployment} = \text{Difference}$$

11. Calculate Property tax as a percent of full market value of all taxable property: 2.25 %

$$\frac{\text{Property Tax (6c)}}{\text{Full Market Value of Taxable Properties (6b)}} \times 100\% = \text{Property tax as a percent of Valuation}$$

12. Calculate overall debt as a percentage to full market value of all taxable property: 0.95 %

$$\frac{\text{Overall Debt (6f)}}{\text{Full Market Value of Taxable Property (6b)}} \times 100\% = \text{Debt as a percent of Full Market Value of Taxable Property}$$

13. Calculate Property Tax Collection Rate: 100 %

$$100\% - \text{Delinquency Tax Rate (6d)} = \text{Property Tax Collection Rate}$$

14. *Economics Test: All the calculations have been completed; take the values calculated and see where they fall on the table below to find the secondary indicators.*

Find where the calculated values fall on each of the rows, follow the column down to the bottom of the table and the large value (1, 2, or 3) below is the secondary indicator. Record the secondary indicator in the space provided below. If the value does not fall anywhere in the table provided (i.e.: no bond rating) give the item a secondary indicator of zero (0).

When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently the most recent rating for a sewer bond should be used. Recent bond rating are included in municipal bond reports from rating agencies (e.g., *Moody's Bond Record*, *Standard and Poor's Corporation*).

See next page for Secondary Indicators tables and calculations.

## SECONDARY INDICATORS

	Secondary Indicators		
Indicator	Weak	Mid-Range	Strong
Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) or Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2%-5%	Below 2%
Unemployment	More than 1% above National Average	National Average	More than 1% below National Average
Median Household Income	More than 10% below State Median	State Median	More than 10% above State Median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2%-4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	>98%

Secondary Indicator Value

1

2

3

	Value	Secondary Indicator
Bond Rating (step 7a)		
Overall Net Debt as Percent to full market value of taxable property (Step 12)	0.95	3
Unemployment (Step 10) - <i>difference between City and National unemployment rates</i>	-0.80	2
Median House Hold Income (Step 9) - <i>% difference between State and City MHI (a positive value represents a City MHI below the State MHI and a negative value represents a City MHI above the State MHI)</i>	22.89	1
Property Tax Revenues as a Percent of Full Market Value of Taxable Property (Step 11)	2.25	2
Property Tax Collection Rate (Step 13)	100	3

Average Value of Secondary Indicator: 2.20

When there are six secondary indicators identified calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Six Secondary Indicators}}{6}$$

When there are five secondary indicators identified (no bond rating) calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Five Secondary Indicators}}{5}$$

15. *Assessment of Substantial Impacts (Matrix): Use below provided table to determine the feasibility of proposing a mechanical plant.*

Use calculated Annual User Charge per Residential Customer Percent of MHI value (Step 13) to find where the value falls within the three vertical columns and the average the secondary score (calculated above) to find where which row applies to the city of choice.

### ASSESSMENT OF SUBSTANTIAL IMPACTS MATRIX

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	True
Greater than 2.5	✓	✓	?

Secondary Score: 2.20

Key:

**?** Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

**X** No, the city cannot afford the proposed mechanical plant and the variance can be granted.

**✓** Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

**Conclusion:** The City (check the answer that best applies):

- ☐ can afford the proposed mechanical treatment facility
- ☒ cannot afford the proposed mechanical treatment facility
- ☐ it is uncertain a city can afford the proposed mechanical treatment facility; additional studies are needed.

If the City cannot afford the proposed mechanical treatment facility then proceed to step 17, calculating the alternative ammonia effluent limits.

If it is uncertain as to whether the facility can afford the proposed mechanical plant, proceed by issuing the permit with a temporary variance requiring further study and including the alternate ammonia effluent limits.

16. When a discharger cannot meet the EPA 2013 ammonia criteria limits calculate the highest attainable condition (HAC) alternate limits. Alternate ammonia HAC limits will be derived as the 99th percentile or the highest value of recent historical effluent discharge data, whichever is lower. The procedure to calculate the alternate ammonia HAC limits are presented in the Master Flow template on worksheet E. Information from section 1 of this form may be used in this section.
17. Include a pollution minimization plan (PMP) in each NPDES permit for dischargers who qualify for the Ammonia MDV, or which later qualify for an individual variance after further studies are performed. See the Kansas Variance Register and the Kansas Surface Water Implementation Procedure for details on the PMP.





## Worksheet A

**EPA 2013 Ammonia Criteria Limits - Mussels Present (whole state)****Discharger:** City of Argonia**NPDES Permit #:** M-AR05-0001**Date:** 02/25/16**Receiving Stream:** CHIKASKIA RIVER; LOWER ARKANSAS RIVER BASIN

Month	Temp	pH	ELS (0=abs,1=pres)	Receiving Stream 30Q10 (cfs)	
Jan	3.6	8	NA	Plant Flow	0.1
Feb	6.3	8	NA		0.07 MGD
Mar	11.4	8	NA		<u>0.10829</u> cfs
April	18.4	8	NA	Aquatic Life Support Factor	0.25
May	19.6	8	NA	(0.25 for ONRW & Special)	
June	24.2	8	NA	(0.5 for Expected)	
July	28	8	NA	(1.0 for Restricted)	
Aug	26.9	8	NA	Background Concentration (mg/l)	<u>0.15</u>
Sep	23.4	8	NA	Mixing Zone allowance	<u>0.1</u>
Oct	16.6	8	NA	ZID allowance	<u>0.01</u>
Nov	11.6	8	NA		
Dec	4	8	NA		

**Temp data from:** Bluff Creek, SC530Chronic Permit Limit  
(Monthly Average)

Chronic Criterion

Jan	3.32	1.80
Feb	3.32	1.80
Mar	2.46	1.35
April	1.52	0.86
May	1.40	0.80
June	1.00	0.59
July	0.75	0.46
Aug	0.82	0.50
Sep	1.06	0.62
Oct	1.72	0.97
Nov	2.43	1.34
Dec	3.32	1.80

Acute Permit Limit  
(Daily Maximum)

Acute Criterion

Jan	9.57	8.77
Feb	9.57	8.77
Mar	8.69	7.96
April	4.86	4.46
May	4.39	4.04
June	3.00	2.76
July	2.18	2.01
Aug	2.39	2.20
Sep	3.20	2.95
Oct	5.64	5.18
Nov	8.54	7.83
Dec	9.57	8.77



**2013 Ammonia Criteria Effluent Limit Summary**Discharging Lagoon Name: City of ArgoniaDischarging Lagoon Permit number: M-AR05-0001 Date: 2/25/2016

Using most current Permit or Water Quality Report Insert most current Ammonia Limitation on Lagoon.

		2013 NH <sub>3</sub> Chronic	2013 NH <sub>3</sub> Acute
		mg/L	
Janurary	1	3.32	9.57
Feburary	2	3.32	9.57
March	3	2.46	8.69
April	4	1.52	4.86
May	5	1.40	4.39
June	6	1.00	3.00
July	7	0.75	2.18
August	8	0.82	2.39
September	9	1.06	3.20
October	10	1.72	5.64
November	11	2.43	8.54
December	12	3.32	9.57



**Worksheet B - Ammonia Effluent History****Dishcharging Lagoon Name:** City of Argonia**Dishcharging Lagoon Permit number:** M-AR05-OO01**Receiving Stream:** CHIKASKIA RIVER; LOWER ARKANSAS RIVER BASIN

Copy &amp; Paste Data Exported from Oracle into this Sheet

KS Permit No.	Federal		Parameter	Effluent		Date of Sample	Month
	Permit No.	Outfall		Data	Units		
M-AR05-OO01	KS0031461	001A1	NH3	1.12	MG/L	3/4/2008	3
M-AR05-OO01	KS0031461	001A1	NH3	0.56	MG/L	4/21/2008	4
M-AR05-OO01	KS0031461	001A1	NH3	1.5	MG/L	5/13/2008	5
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	6/10/2008	6
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	7/21/2008	7
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	9/8/2008	9
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	10/7/2008	10
M-AR05-OO01	KS0031461	001A1	NH3	0.61	MG/L	11/17/2008	11
M-AR05-OO01	KS0031461	001A1	NH3	0.84	MG/L	12/8/2008	12
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	1/5/2009	1
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	2/10/2009	2
M-AR05-OO01	KS0031461	001A1	NH3	1.12	MG/L	4/6/2009	4
M-AR05-OO01	KS0031461	001A1	NH3	0.92	MG/L	5/13/2009	5
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	6/15/2009	6
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	9/14/2009	9
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	1/25/2010	1
M-AR05-OO01	KS0031461	001A1	NH3	0.25	MG/L	3/8/2010	3
M-AR05-OO01	KS0031461	001A1	NH3	1.12	MG/L	6/1/2010	6
M-AR05-OO01	KS0031461	001A1	NH3	2.94	MG/L	3/18/2013	3
M-AR05-OO01	KS0031461	001A1	NH3	2.94	MG/L	3/18/2014	3
M-AR05-OO01	KS0031461	001A1	NH3	1.68	MG/L	6/2/2015	6
M-AR05-OO01	KS0031461	001A1	NH3	3.22	MG/L	1/25/2016	1



Worksheet C - Comparison of Historical Ammonia Data for WWTP

Dishcharging Lagoon Name:

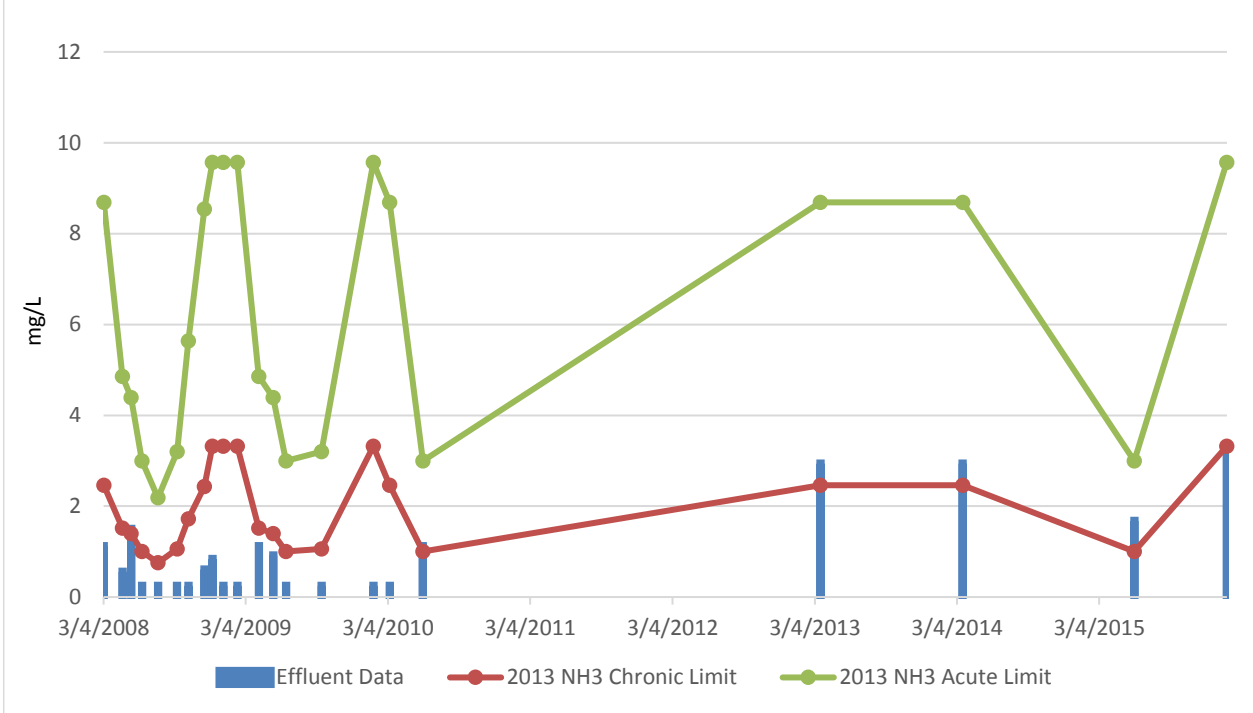
City of Argonia

Dishcharging Lagoon Permit number:

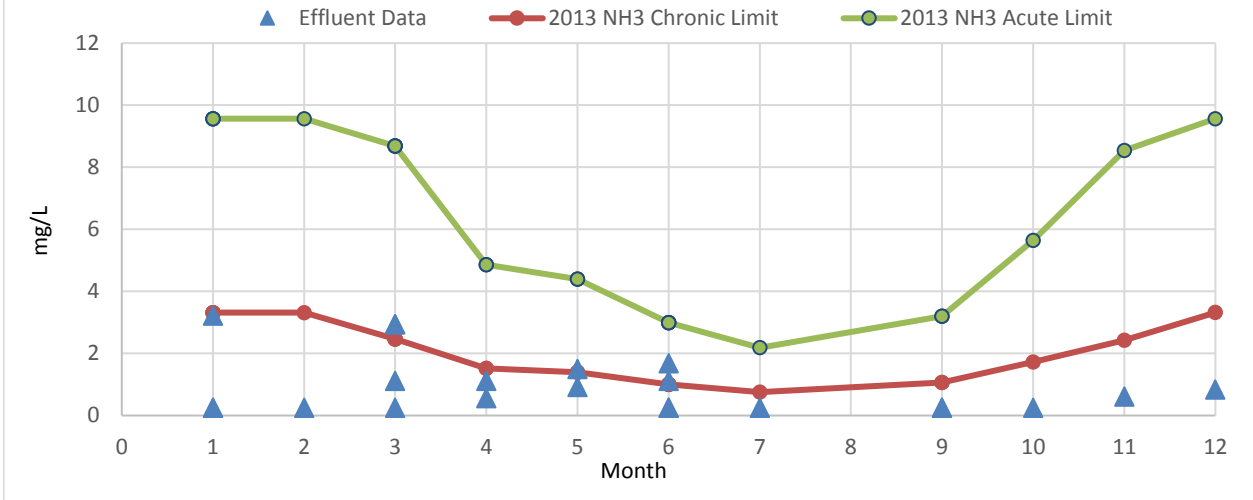
M-AR05-0001

Date: 8/25/2016

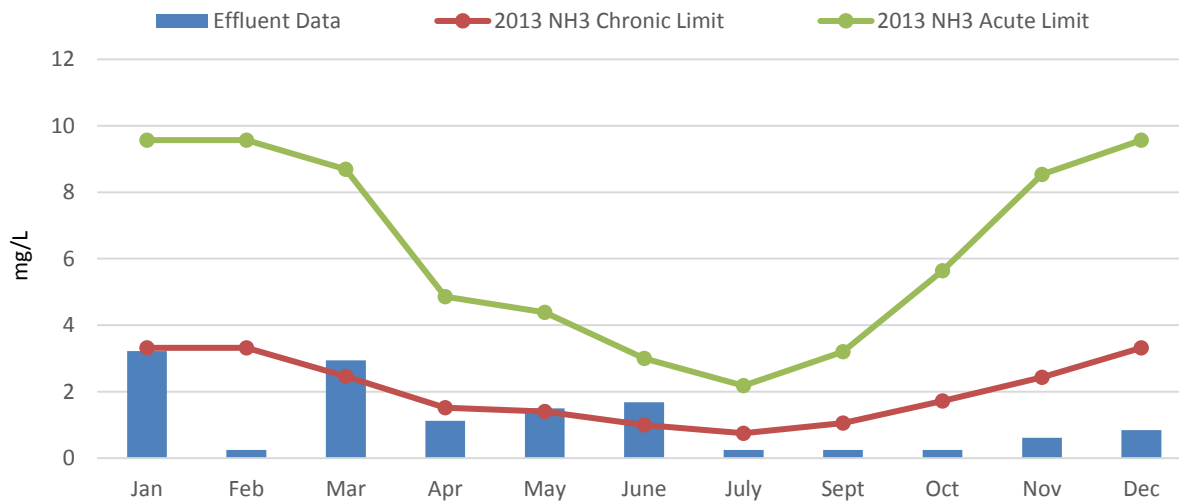
Comparison of Ammonia Data for Argonia WWTP 2008-2016



Comparison of Ammonia Data for Argonia WWTP - Monthly Values for the Data Set



Comparison of Ammonia Data for Argonia WWTP - Highest Monthly Value  
for the Data Set



Date of Sample	Month	Effluent Data	2013 NH <sub>3</sub> Chronic	2013 NH <sub>3</sub> Acute Limit
3/4/2008	3	1.12	2.46	8.69
4/21/2008	4	0.56	1.52	4.86
5/13/2008	5	1.5	1.40	4.39
6/10/2008	6	0.25	1.00	3.00
7/21/2008	7	0.25	0.75	2.18
9/8/2008	9	0.25	1.06	3.20
10/7/2008	10	0.25	1.72	5.64
11/17/2008	11	0.61	2.43	8.54
12/8/2008	12	0.84	3.32	9.57
1/5/2009	1	0.25	3.32	9.57
2/10/2009	2	0.25	3.32	9.57
4/6/2009	4	1.12	1.52	4.86
5/13/2009	5	0.92	1.40	4.39
6/15/2009	6	0.25	1.00	3.00
9/14/2009	9	0.25	1.06	3.20
1/25/2010	1	0.25	3.32	9.57
3/8/2010	3	0.25	2.46	8.69
6/1/2010	6	1.12	1.00	3.00
3/18/2013	3	2.94	2.46	8.69
3/18/2014	3	2.94	2.46	8.69
6/2/2015	6	1.68	1.00	3.00
1/25/2016	1	3.22	3.32	9.57



## Worksheet D - Economic Eligibility Calculations

Dishcarging Lagoon Name: City of Argonia

Dishcarging Lagoon Permit number: M-AR05-0001

Prepared by: Frank R. Weinhold

Date Prepared: November 10, 2016

Reviewed by:

Date Accepted:

## Determining Financial Eligibility for Lagoon Variance

## Inputs

City:	Argonia
County:	Sumner
City Population:	489
City MHI:	\$ 40,000.00
State MHI:	\$ 51,872.00

Property Tax Unit	Mill Rate	
State of Kansas	1.500	
County	44.235	
City	56.563	
USD Valuation	47.474	
Library	1.936	
Fire District	6.218	
Cemetery	2.500	
Township		
Ambulance		
Extension District		
Total Mill Levy	160.426	

## Municipal Preliminary Screener

4.14 \*\*If value is above 4% you may stop here

Mechanical Plant Cost to User 137.94 \$ per User per Month

County Unemployment Rate:	4.2
National Unemployment Rate:	5.0
Assessed Valuation	\$ 13,970,384.17
Full Market Value of Property:	\$ 99,788,458.36
Property Tax:	\$ 2,241,212.85
Delinquent Tax:	
Delinquent Tax Rate:	
Total Debt:	\$ 949,261.00

To Input the Bond Rating Correctly:

If the Bond Rating is \_\_\_\_\_ Input \_\_\_\_\_

Below BBB/Baa	1
BBB/Baa	2
Above BBB/Baa	3
If there is no Bond rating	0

Bond Rating: 0

## Calculated Values

## Secondary Indicators

		Weak	Mid-Range	Strong
Bond Rating:	0	0	0	0
Overall Net Debt as Percent of Full Market Values of City Taxable Property	0.95 %	0	0	3
Unemployment: Difference between County and National Rates	-0.80 %	0	2	0
Median Household Income: Percent Difference State MHI minus City MHI (>10% below will be a positive value and >10% above will be a negative value)	22.89 %	1	0	0
Property Tax Burden as a Percent of Full Market Value of City Taxable Property	2.25 %	0	2	0
Property Tax Collection Rate	100 %	0	0	3

Cost of Building a New Mechanical

Treatment Facility 137.94 \$ per User per Month

as a percentage of MHI 4.14 %

## Secondary Score

NOTE: Secondary Score does not need to be calculated when the primary screener is greater than four percent. This worksheet calculates it automatically.

## Municipal Preliminary Screener

4.14

## Conclusion :

2.20

Primary Score: 4.14

## Secondary Score

## Municipal Preliminary Screener

	Less than 1.0	Between 1.0 & 2.0	Greater than 2.0
Less than 1.5	FALSE	FALSE	FALSE
Between 1.5 and 2.5	FALSE	FALSE	TRUE
Greater than 2.5	FALSE	FALSE	FALSE

Key: Look for coloring of the cell that reads TRUE

Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

No, City cannot afford project mechanical plant and the variance can be granted.

## Comments:

Reading the table: The Preliminary Screener is 4.14 which is greater than 2.0 and the Secondary Score is 2.2; therefore the City of Argonia cannot afford a Mechanical Plant. The City of Argonia had 5 ammonia violations.



Property Tax Calculation - Attachment to Worksheet D

Dishcarging Lagoon Name: City of Argonia

Dishcarging Lagoon Permit  
number: M-AR05-OO01

Date: 11/10/2016

Fill in green squares with Information off of County Tax Levy Sheet

Name of City:	Argonia	County:	Sumner
Tax Year:	2015	Prepared by:	Frank R. Weinhold
Ks State Valuation	\$ 1,532,821,998.00	Date:	8-Nov-16
County Valuation	\$ 2,115,596.00	USD Gen'l Fund Valuation:	\$ 12,408,417.00
City Valuation:	\$ 13,970,384.17		
USD Valuation :	\$ 13,357,810.00		
Library	\$ -		
Fire District	\$ -		
Cemetery	\$ -		

Taxing Unit	Mill Rate	Tax Dollars Levied
State of Kansas	1.500	20,955.58
County	44.235	617,979.94
City	56.563	790,206.84
USD Valuation	47.474	663,230.02
Library	1.936	27,046.66
Fire District	6.218	86,867.85
Cemetery	2.500	34,925.96
Total Tax Dollars Levied	160.426	\$2,241,212.85
Total Property Tax After Delinquency		\$2,241,212.85

Property Tax	\$	2,241,212.85
Delinquent Tax	\$-	
Delinquent Tax Rate		0.000



## Worksheet E- Annual EPA 2013 Ammonia Criteria Limits - Mussels Present (whole state)

Use this worksheet to calculate alternate limits when adequate data is available.

Discharger: City of Argonia NPDES Permit #: M-AR05-0001 Date: 8/25/2016Receiving Stream: CHIKASKIA RIVER; LOWER ARKANSAS RIVER BASIN

DATE mg/L VIOLATIONS

1/5/2009	0.25	No
1/25/2010	0.25	No
1/25/2016	3.22	No
2/10/2009	0.25	No
3/4/2008	1.12	No
3/8/2010	0.25	No
3/18/2013	2.94	Yes
3/18/2014	2.94	Yes
4/21/2008	0.56	No
4/6/2009	1.12	No
5/13/2008	1.5	Yes
5/13/2009	0.92	No
6/10/2008	0.25	No
6/15/2009	0.25	No
6/1/2010	1.12	Yes
6/2/2015	1.68	Yes
7/21/2008	0.25	No
9/8/2008	0.25	No
9/14/2009	0.25	No
10/7/2008	0.25	No
11/17/2008	0.61	No
12/8/2008	0.84	No

**HAC Limits (Highest Limit)**

Annual 3.22

**99th Percentile Alternate**

Annual 3.16

**Chronic Permit Limit  
(Monthly Average)**

Jan	3.32
Feb	3.32
Mar	2.46
April	1.52
May	1.40
June	1.00
July	0.75
Aug	0.82
Sep	1.06
Oct	1.72
Nov	2.43
Dec	3.32

**Acute Permit Limit  
(Daily Maximum)**

Jan	9.57
Feb	9.57
Mar	8.69
April	4.86
May	4.39
June	3.00
July	2.18
Aug	2.39
Sep	3.20
Oct	5.64
Nov	8.54
Dec	9.57

**Water Quality Certification Recommendation:**

(Log recommended limitations by the type of limitation being

2013 Limits Recommended: NA

HAC Limits Recommended: NA

99th Percentile Alternate Seasonal

Limits Recommended: 3.16 mg/L

Insufficient data - Monitoring Recommended: NA

Additional Notes:



## Example 2 - Rossville, Kansas, Municipal Preliminary Screener > 2.0





**Kansas Eligibility Determination for Wastewater Lagoon Variance - Ammonia  
July 12, 2016**

Prepared by: Julia Young

Date Prepared: April 14, 2017

Reviewed by: \_\_\_\_\_

Date accepted: \_\_\_\_\_

Name of Interested City: Rossville

County City Resides in: Shawnee

1. Assess:

- d. Review NPDES permit to determine if the discharger can meet the new ammonia criteria.
- e. Assess the historical ammonia effluent data and compare to the projected 2013 ammonia criteria limits; compare the data sets to determine if the discharger can meet the required ammonia limitations. If the sample data presents >1 violations over the period of record compared to the relative 2013 ammonia limits, then the facility can proceed to the financial eligibility calculation, if not then reissue the permit with new limits based on the 2013 ammonia criteria.
- f. The discharger can meet the new ammonia criteria: ☐ Yes ☒ No ☐ More data needed

If the historical effluent data from the period of record exceeds the projected 2013 ammonia criteria limits in two or more samples then complete this form in its entirety.

2. Go to the US Census Bureau's website (below) to locate the following information

[http://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml)

g. City Population: 2,993 Date of Census: 2010

h. Median Household Income (MHI) under the income tab on the right: \$ 45,250

Date of Census: 2011-20158 American Community Survey 5-yr Estimates

i. State MHI: \$52,205

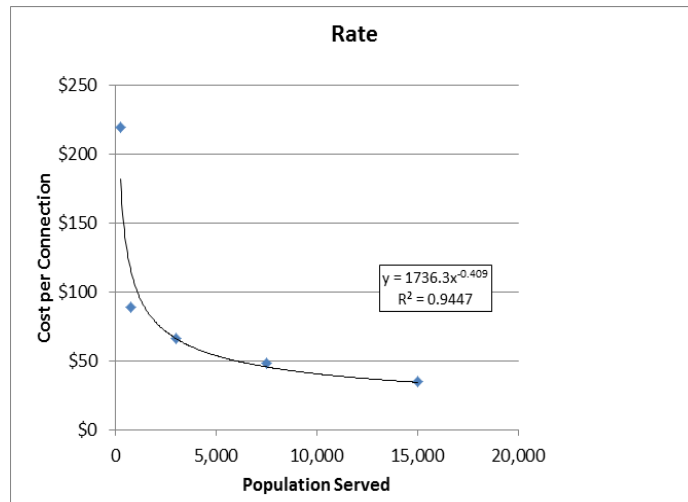
3. Calculate cost of mechanical plant: \$ 137.94 per connection per month

$$y = 1736.3x^{-0.409} \text{ where } x \text{ is the population of the town}$$

The equation used to calculate the cost of a new mechanical plant as derived from a set of cost data provided by Tetra Tech in their Report *Kansas Lagoon Upgrades to Meet Water Quality Standards for Ammonia*. KDHE utilized the cost per facility (Located in Table 15 within the report) and plotted that against the population serviced by that sized facility. Calculating the cost per connection by

population serviced gives a more accurate and relatable expense that will be incurred by the rate payers. The result can be found in Figure 1.

Figure 1: Rate Curve



4. Calculate the percent of (the city's annual) MHI that city sewer utility residential customers would be paying to fund a new mechanical plant (this is the municipal primary screener): 3.6 %

$$\frac{(\text{Cost of mechanical plant (step 3)} \times 12)}{\text{MHI}} \times 100\% = \text{Cost of new plant as a Percent of MHI}$$

If the municipal primary screener exceeds 4.0% then you may stop here and not continue on to calculate the secondary indicators. Proceed to calculate alternative ammonia effluent limit (go to step 17). Table 2.2 – Assessment of the Substantial Impacts Matrix – if the Economic Guidance (see section 16 of this form) indicates that the primary indication (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, a level of 100% greater than the 2% MHI will be utilized. The 4% value represents a threshold level where completion of the secondary economic test is expected to be unnecessary expenditure of resources.

5. First (to find the county unemployment) go to <https://klic.dol.ks.gov/gsipub/index.asp?docid=402> and select the most recent month available. This will direct you to a map of Kansas with all unemployment rates for each county as a whole, find the county in which the city of interest resides.

j. County Unemployment rate: 3 % Date: 12 / 2016

Go to <http://data.bls.gov/timeseries/LNS14000000> and scroll to the bottom and find the unemployment rate for the month and year that matches the most recent KS County data you obtained above.

k. National Unemployment rate: 4.7 % Date: 12 / 2016

6. Go to the Department of Administration's website (below) and click on the link for the "Cities" most recent **completed** fiscal year's municipal budgets <https://admin.ks.gov/offices/chief-financial->

[officer/municipal-services/municipal-budgets](#) chose the city you're working with and download their budget. If you cannot find their budget you may need to go back one fiscal year. Open/Save the file and look for the following data:

l. Total assessed valuation: \$ 7,435,056.00 Date: 2016

m. The assessed valuation is typically 14% of the Full Market Value of Taxable Property in a small Kansas town.

Calculate Full Market Value of Taxable Property: \$ 53,107,542.86

$$\frac{\text{Total Assessed Valuation}}{0.14} = \text{Full Market Value of Taxable Property}$$

n. Property Tax: To calculate the property tax value use the Property Tax spread sheet form in the Master Flow Template and county tax levy sheet found at <https://admin.ks.gov/offices/chief-financial-officer/municipal-services/county-tax-levy-sheets> for the most recent year and correct county:

\$ 1,129,957.51 Date: 2016

o. Delinquent Tax Rate: 0.45 % Date: 2016

p. Total Bond Value (if any can be found under the Statement of Indebtedness): \$ 307,000.00

i. Bond Value: \$ 107,000.00 Year of Issue: 2012 Bond Type: G.O.

ii. Bond Value: \$ 200,000 Year of Issue: 2014 Bond Type: G.O.

iii. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_

iv. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_

q. Total Debt (usually on the last page found in the NOTICE OF HEARING at the bottom):

\$ 1,684,628.00 Date: 2016

Within the budget if the town holds any bonds or other debt or school district debts you will need to go through step 8 and find if the town has a bond rating. If they do not have a bond rating check the box in 8b and proceed to step 9.

7. Bond Rating: Go to <http://emma.msrb.org/Main/QuickSearch> and type the city name into the search bar and click the green arrow. The search will only return a link if the city holds any bonds. Click on the city name. If the city has a bond rating (not all cities that issued bonds have a rating) it can be found in the far left column.

r. Overall Bond Rating: NA Date: \_\_\_\_\_

s. ☐ No Bond Issue Information Provided

8. Calculate the number of rate payers: 1197.2

$$\text{rate payers} = \text{population} \div 2.5$$

9. Calculate the percent difference between the State MHI (2c) and City's MHI (2b): 1.39 %  
When the percent difference value is greater than 10% below the State MHI and is a positive value it is representing a City MHI below State MHI. When the percent difference value is greater than 10% above the State MHI the value will be negative and it is representing a City MHI above the State MHI.

$$\frac{\text{State MHI} - \text{City MHI}}{\text{State MHI}} \times 100\% = \text{Percent Difference}$$

10. Calculate the difference between County's unemployment rate (5a) and the National unemployment rate (5b): -0.8 %

$$\text{County Unemployment} - \text{National Unemployment} = \text{Difference}$$

11. Calculate Property tax as a percent of full market value of all taxable property: 2.13 %

$$\frac{\text{Property Tax (6c)}}{\text{Full Market Value of Taxable Properties (6b)}} \times 100\% = \text{Property tax as a percent of Valuation}$$

12. Calculate overall debt as a percentage to full market value of all taxable property: 3.17 %

$$\frac{\text{Overall Debt (6f)}}{\text{Full Market Value of Taxable Property (6b)}} \times 100\% = \text{Debt as a percent of Full Market Value of Taxable Property}$$

13. Calculate Property Tax Collection Rate: 99.55 %

$$100\% - \text{Delinquent Tax Rate (6d)} = \text{Property Tax Collection Rate}$$

14. *Economics Test: All the calculations have been completed; take the values calculated and see where they fall on the table below to find the secondary indicators.*

Find where the calculated values fall on each of the rows, follow the column down to the bottom of the table and the large value (1, 2, or 3) below is the secondary indicator. Record the secondary indicator in the space provided below. If the value does not fall anywhere in the table provided (i.e.: no bond rating) give the item a secondary indicator of zero (0).

When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently the most recent rating for a sewer bond should be used. Recent bond rating are included in municipal bond reports from rating agencies (e.g., *Moody's Bond Record*, *Standard and Poor's Corporation*).

See next page for Secondary Indicators tables and calculations.

## SECONDARY INDICATORS

	Secondary Indicators		
Indicator	Weak	Mid-Range	Strong
Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) or Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2%-5%	Below 2%
Unemployment	More than 1% above National Average	National Average	More than 1% below National Average
Median Household Income	More than 10% below State Median	State Median	More than 10% above State Median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2%-4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	>98%

Secondary Indicator Value                      **1**                      **2**                      **3**

	Value	Secondary Indicator
Bond Rating (step 7a)		
Overall Net Debt as Percent to full market value of taxable property (Step 12)	3.17	2
Unemployment (Step 10) – <i>difference between County and National unemployment rates</i>	-0.80	2
Median House Hold Income (Step 9) - % <i>difference between State and City MHI (a positive value represents a City MHI below the State MHI and a negative value represents a City MHI above the State MHI)</i>	1.39	2
Property Tax Revenues as a Percent of Full Market Value of Taxable Property (Step 11)	2.13	2
Property Tax Collection Rate (Step 13)	99.5	3

Average Value of Secondary Indicator: 2.2

When there are six secondary indicators identified calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Six Secondary Indicators}}{6}$$

When there are five secondary indicators identified (no bond rating) calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Five Secondary Indicators}}{5}$$

15. *Assessment of Substantial Impacts (Matrix): Use below provided table to determine the feasibility of proposing a mechanical plant.*

Use calculated Annual User Charge per Residential Customer Percent of MHI value (Step 13) to find where the value falls within the three vertical columns and the average the secondary score (calculated above) to find where which row applies to the city of choice.

### ASSESSMENT OF SUBSTANTIAL IMPACTS MATRIX

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	True
Greater than 2.5	✓	✓	?

Secondary Score: 2.20

Key:

**?** Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

**X** No, the city cannot afford the proposed mechanical plant and the variance can be granted.

**✓** Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

**Conclusion:** The City (check the answer that best applies):

- ☐ can afford the proposed mechanical treatment facility
- ☒ cannot afford the proposed mechanical treatment facility
- ☐ it is uncertain a city can afford the proposed mechanical treatment facility; additional studies are needed.

If the City cannot afford the proposed mechanical treatment facility then proceed to step 17, calculating the alternative ammonia effluent limits.

If it is uncertain as to whether the facility can afford the proposed mechanical plant, proceed by issuing the permit with a temporary variance requiring further study and including the alternate ammonia effluent limits.

16. When a discharger cannot meet the EPA 2013 ammonia criteria limits calculate the highest attainable condition (HAC) alternate limits. Alternate ammonia HAC limits will be derived as the 99th percentile or the highest value of recent historical effluent discharge data, whichever is lower. The procedure to calculate the alternate ammonia HAC limits are presented in the Master Flow template on worksheet E. Information from section 1 of this form may be used in this section.
17. Include a pollution minimization plan (PMP) in each NPDES permit for dischargers who qualify for the Ammonia MDV, or which later qualify for an individual variance after further studies are performed. See the Kansas Variance Register and the Kansas Surface Water Implementation Procedure for details on the PMP.





## Worksheet A

**EPA 2013 Ammonia Criteria Limits - Mussels Present (whole state)**Discharger: City of Rossville NPDES Permit #: M-KS64-0001 Date: 03/14/17Receiving Stream: Cross Creek

Month	Temp	pH	ELS (0=abs,1=pres)	Receiving Stream 30Q10 (cfs)	1
Jan	1.7	8	NA	Plant Flow	0.172 MGD
Feb	3.1	8	NA		0.2661 cfs
Mar	6.7	8	NA	Aquatic Life Support Factor	0.5
April	13.7	8	NA	(0.25 for ONRW & Special)	
May	17.6	8	NA	(0.5 for Expected)	
June	23.8	8	NA	(1.0 for Restricted)	
July	26.4	8	NA	Background Concentration (mg/l)	0.15
Aug	26.1	8	NA	Mixing Zone allowance	0.5
Sep	20.6	8	NA	ZID allowance	0.05
Oct	13.9	8	NA		
Nov	5.7	8	NA		
Dec	1.8	8	NA		

Temp data from: SC101Chronic Permit Limit  
(Monthly Average)

Chronic Criterion

Jan	4.89	1.80	
Feb	4.89	1.80	
Mar	4.89	1.80	
April	3.08	1.17	
May	2.33	0.91	
June	1.47	0.61	
July	1.20	0.51	1.47
Aug	1.23	0.52	
Sep	1.87	0.75	
Oct	3.03	1.15	
Nov	4.89	1.80	
Dec	4.89	1.80	

Acute Permit Limit  
(Daily Maximum)

Acute Criterion

Jan	10.39	8.77
Feb	10.39	8.77
Mar	10.39	8.77
April	7.79	6.58
May	5.63	4.76
June	3.36	2.85
July	2.70	2.30
Aug	2.77	2.35
Sep	4.38	3.71
Oct	7.66	6.47
Nov	10.39	8.77
Dec	10.39	8.77



**2013 Ammonia Criteria Effluent Limit Summary**Dishcarging Lagoon Name: City of RossvilleDishcarging Lagoon Permit number: M-KS64-0001Date: 3/14/2017

Using most current Permit or Water Quality Report Insert most current Ammonia Limitation on Lagoon.

		2013 NH <sub>3</sub> Chronic	2013 NH3 Acute
		mg/L	
Janurary	1	4.89	10.39
Feburary	2	4.89	10.39
March	3	4.89	10.39
April	4	3.08	7.79
May	5	2.33	5.63
June	6	1.47	3.36
July	7	1.20	2.70
August	8	1.23	2.77
September	9	1.87	4.38
October	10	3.03	7.66
November	11	4.89	10.39
December	12	4.89	10.39



**Worksheet B - Ammonia Effluent History****Dishcharging Lagoon Name:** City of Rossville**Dishcharging Lagoon Permit number:** M-KS64-0001**Receiving Stream:** Cross Creek

Copy &amp; Paste Data Exported from Oracle into this Sheet

KS Permit No.	Federal	Outfall	Parameter	Effluent		Date of Sample	Month
	Permit No.			Data	Units		
M-KS64-0001	KS0046477	001A1	NH3	1.13	mg/L	3/4/2008	3
M-KS64-0001	KS0046477	001A1	NH3	1.06	mg/L	6/30/2008	6
M-KS64-0001	KS0046477	001A1	NH3	0.2	mg/L	8/19/2008	8
M-KS64-0001	KS0046477	001A1	NH3	0.52	mg/L	11/19/2008	11
M-KS64-0001	KS0046477	001A1	NH3	1.52	mg/L	2/24/2009	2
M-KS64-0001	KS0046477	001A1	NH3	2.49	mg/L	5/26/2009	5
M-KS64-0001	KS0046477	001A1	NH3	0.26	mg/L	7/30/2009	7
M-KS64-0001	KS0046477	001A1	NH3	0.1	mg/L	10/22/2009	10
M-KS64-0001	KS0046477	001A1	NH3	5.46	mg/L	3/12/2010	3
M-KS64-0001	KS0046477	001A1	NH3	0.22	mg/L	6/29/2010	6
M-KS64-0001	KS0046477	001A1	NH3	0.51	mg/L	9/30/2010	9
M-KS64-0001	KS0046477	001A1	NH3	0.48	mg/L	11/22/2010	11
M-KS64-0001	KS0046477	001A1	NH3	1.24	mg/L	3/30/2011	3
M-KS64-0001	KS0046477	001A1	NH3	2.6	mg/L	12/21/2011	12
M-KS64-0001	KS0046477	001A1	NH3	1.78	mg/L	3/15/2012	3
M-KS64-0001	KS0046477	001A1	NH3	1.29	mg/L	5/23/2012	5
M-KS64-0001	KS0046477	001A1	NH3	0.37	mg/L	12/30/2012	12
M-KS64-0001	KS0046477	001A1	NH3	0.19	mg/L	1/29/2013	1
M-KS64-0001	KS0046477	001A1	NH3	0.27	mg/L	4/26/2013	4
M-KS64-0001	KS0046477	001A1	NH3	1.13	mg/L	8/29/2013	8
M-KS64-0001	KS0046477	001A1	NH3	0.35	mg/L	10/24/2013	10
M-KS64-0001	KS0046477	001A1	NH3	2.24	mg/L	2/28/2014	2
M-KS64-0001	KS0046477	001A1	NH3	0.46	mg/L	4/9/2014	4
M-KS64-0001	KS0046477	001A1	NH3	0.62	mg/L	9/19/2014	9
M-KS64-0001	KS0046477	001A1	NH3	1.35	mg/L	12/22/2014	12
M-KS64-0001	KS0046477	001A1	NH3	1.38	mg/L	1/30/2015	1
M-KS64-0001	KS0046477	001A1	NH3	0.2	mg/L	4/29/2015	4
M-KS64-0001	KS0046477	001A1	NH3	3.36	mg/L	7/21/2015	7
M-KS64-0001	KS0046477	001A1	NH3	2.7	mg/L	12/16/2015	12
M-KS64-0001	KS0046477	001A1	NH3	3.2	mg/L	3/21/2016	3
M-KS64-0001	KS0046477	001A1	NH4	0.11	mg/L	6/23/2016	6



Worksheet C - Comparison of Historical Ammonia Data for WWTP

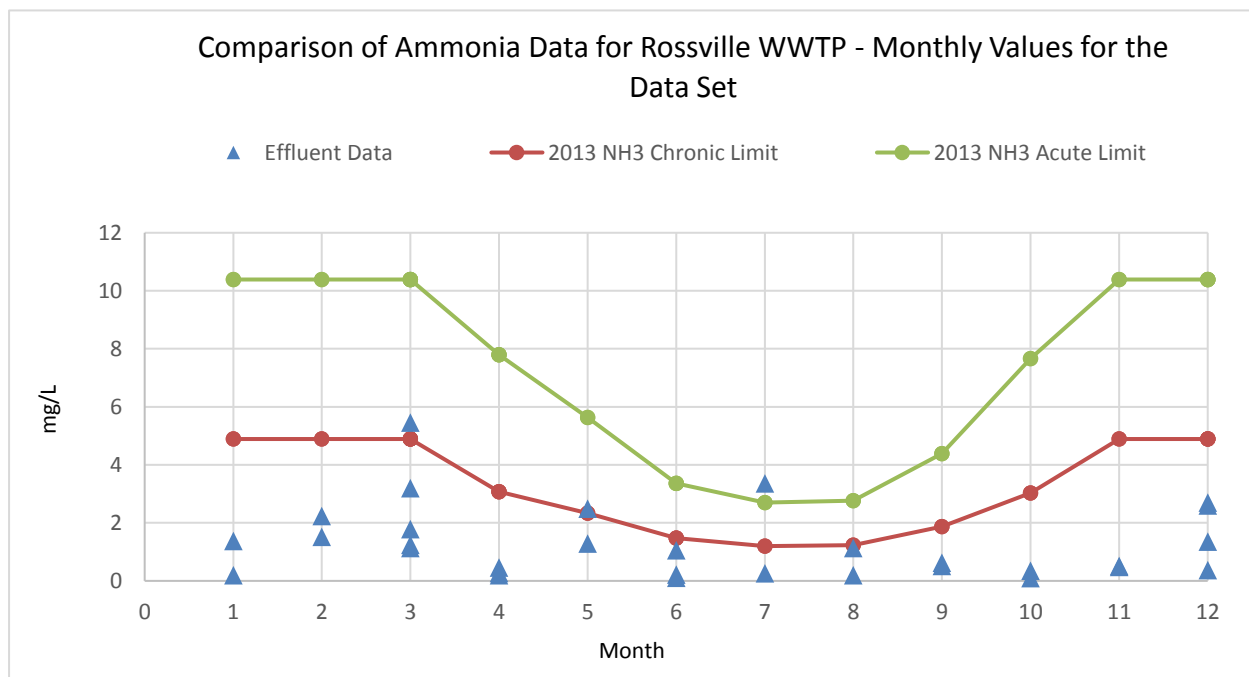
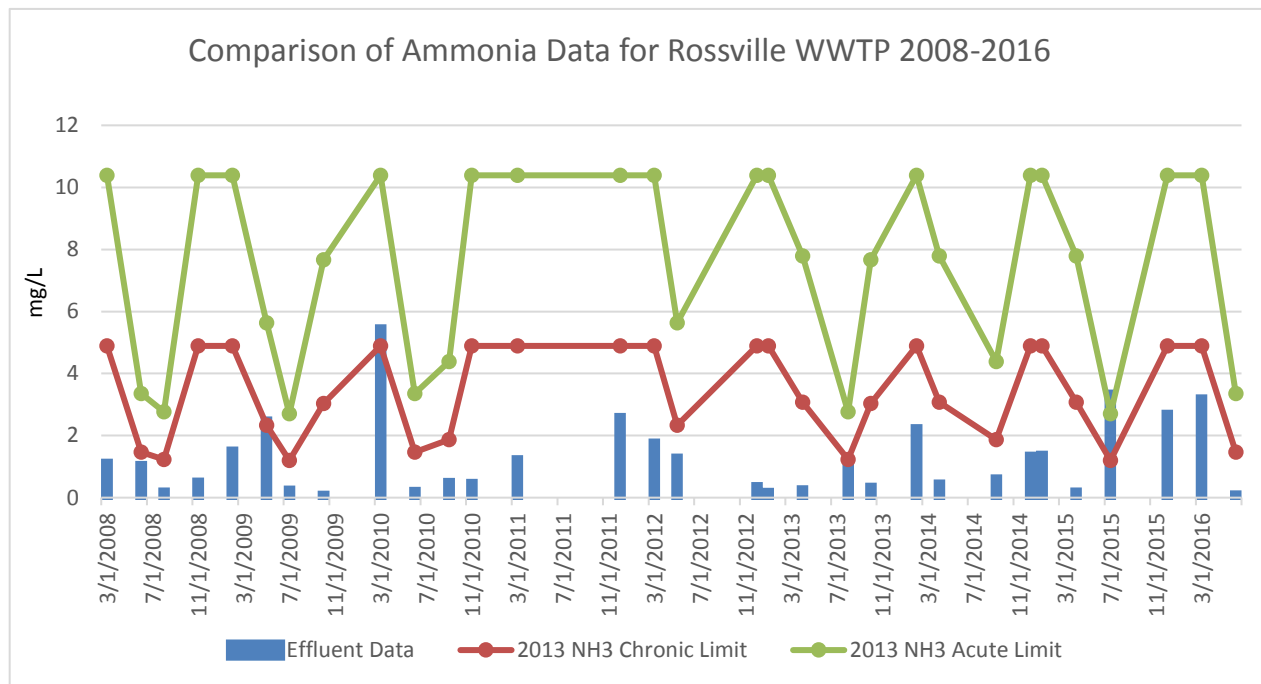
Dishcharging Lagoon Name:

City of Rossville

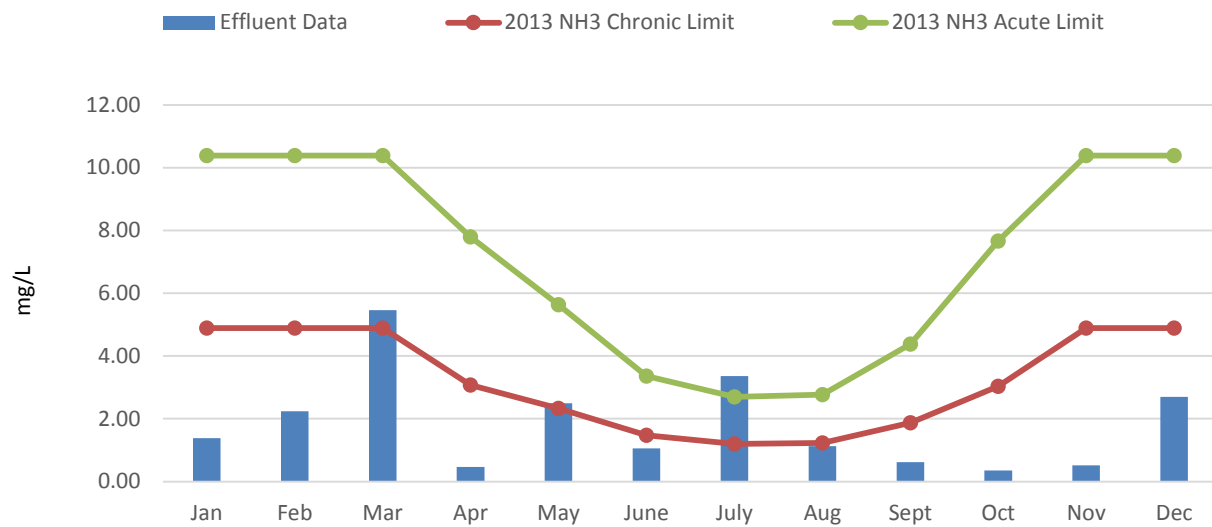
Dishcharging Lagoon Permit number:

M-KS64-0001

Date: 3/14/2017



Comparison of Ammonia Data for Rossville WWTP



Date of Sample	Month	Effluent Data	2013 NH <sub>3</sub> Chronic Limit	2013 NH <sub>3</sub> Acute Limit
3/4/2008	3	1.13	4.89	10.39
6/30/2008	6	1.06	1.47	3.36
8/19/2008	8	0.2	1.23	2.77
11/19/2008	11	0.52	4.89	10.39
2/24/2009	2	1.52	4.89	10.39
5/26/2009	5	2.49	2.33	5.63
7/30/2009	7	0.26	1.20	2.70
10/22/2009	10	0.1	3.03	7.66
3/12/2010	3	5.46	4.89	10.39
6/29/2010	6	0.22	1.47	3.36
9/30/2010	9	0.51	1.87	4.38
11/22/2010	11	0.48	4.89	10.39
3/30/2011	3	1.24	4.89	10.39
12/21/2011	12	2.6	4.89	10.39
3/15/2012	3	1.78	4.89	10.39
5/23/2012	5	1.29	2.33	5.63
12/30/2012	12	0.37	4.89	10.39
1/29/2013	1	0.19	4.89	10.39
4/26/2013	4	0.27	3.08	7.79
8/29/2013	8	1.13	1.23	2.77
10/24/2013	10	0.35	3.03	7.66
2/28/2014	2	2.24	4.89	10.39
4/9/2014	4	0.46	3.08	7.79
9/19/2014	9	0.62	1.87	4.38
12/22/2014	12	1.35	4.89	10.39
1/30/2015	1	1.38	4.89	10.39
4/29/2015	4	0.2	3.08	7.79
7/21/2015	7	3.36	1.20	2.70
12/16/2015	12	2.7	4.89	10.39
3/21/2016	3	3.2	4.89	10.39
6/23/2016	6	0.11	1.47	3.36



## Worksheet D - Economic Eligibility Calculations

Discharging Lagoon Name: City of RossvilleDischarging Lagoon Permit number: M-KS64-0001Prepared by: Julia YoungDate Prepared: April 11, 2017

Reviewed by:

Date Accepted:

**Determining Financial Eligibility for Lagoon Variance***Inputs*City: Rossville  
County: ShawneeCity Population: 1151City MHI: \$ 51,477.00State MHI: \$ 52,205.00

Property Tax Unit	Mill Rate
State of Kansas	1.500
County	48.345
City	38.455
USD 321	35.828
Fire District No. 3	9.628
Drainage District	2.964
Cemetery	
Township	7.868
MTAA (Transit & Airport Authority)	6.260
Cross Creek J-42 Watershed	1.129
<b>Total Mill Levy</b>	<b>151.977</b>

**Municipal Preliminary Screener****2.27** \*\*If value is above 4% you may stop hereMechanical Plant Cost to User 97.20 \$ per User per Month

County Unemployment Rate:	<u>3.9</u>
National Unemployment Rate:	<u>4.7</u>
Assessed Valuation	<u>\$ 7,435,056.00</u>
Full Market Value of Property:	<u>\$ 53,107,542.86</u>
Property Tax:	<u>\$ 1,129,957.51</u>
Delinquent Tax:	<u>\$ 5,088.00</u>
Delinquent Tax Rate:	<u>0.45%</u>
Total Debt:	<u>\$ 1,684,628.00</u>

Bond Rating: 0

To Input the Bond Rating Correctly:

If the Bond Rating is \_\_\_\_\_ Input \_\_\_\_\_

Below BBB/Baa 1

BBB/Baa 2

Above BBB/Baa 3

If there is no Bond rating 0

	Calculated Values	Weak	Mid-Range	Strong
Bond Rating:	0		0	0
Overall Net Debt as Percent of Full Market Values of City Taxable Property	3.17 %		0	2
Unemployment: Difference between County and National Rates	-0.80 %		0	2
Median Household Income: Percent Difference State MHI minus City MHI (>10% below will be a positive value and >10% above will be a negative value)	1.39 %		0	2
Property Tax Burden as a Percent of Full Market Value of City Taxable Property	2.13 %		0	2
Property Tax Collection Rate	99.55 %		0	0

Cost of Building a New Mechanical

Treatment Facility 97.20 \$ per User per Month  
as a percentage of MHI 2.27 %**Secondary Score** 2.20**Municipal Preliminary Screener** 2.27**Conclusion :**

2.20

Primary Score: 2.27

**Secondary Score****Municipal Preliminary Screener**

	Less than 1.0	Between 1.0 & 2.0	Greater than 2.0
Less than 1.5	FALSE	FALSE	FALSE
Between 1.5 and 2.5	FALSE	FALSE	TRUE
Greater than 2.5	FALSE	FALSE	FALSE

Key: Look for coloring of the cell that reads TRUE

Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

No, City cannot afford project mechanical plant and the variance can be granted.

**Comments:**

Reading the table: The Preliminary Screener is 2.27 which is greater than 2.0 and the Secondary Score is 2.2; therefore the City of Rossville cannot afford a Mechanical Plant. The City of Rossville had 3 ammonia violations.



Property Tax Calculation - Attachment to Worksheet D

Dishcarging Lagoon Name: City of Rossville

Dishcarging Lagoon Permit number: M-KS64-OO01

Date: 4/11/2017

Fill in green squares with Information off of County Tax Levy Sheet

Name of City:	Rossville	County:	Shawnee
Tax Year:	2016	Prepared by:	Julia Young
Ks State Valuation	\$ 1,598,497,278.00	Date:	14-Apr-17
County Valuation	\$ 1,596,995,365.00	USD Gen'l Fund Valuation:	\$ 22,898,295.00
City Valuation:	\$ 7,435,056.00		
USD Valuation :			
Library			
Fire District	\$ 17,519,002.00		
Cemetery	\$ -		

Taxing Unit	Mill Rate	Tax Dollars Levied
State of Kansas	1.500	11,152.58
County	48.345	359,447.78
City	38.455	285,915.08
USD 321	35.828	266,383.19
Fire District	9.628	71,584.72
Drainage District	2.964	22,037.51
Cemetery		0.00
Township	7.868	58,499.02
MTAA (Transit & Airport Authority)	6.260	46,543.45
Cross Creek J-42 Watershed	1.129	8,394.18
Total Tax Dollars Levied	151.977	\$1,129,957.51
Total Property Tax After Delinquency		\$1,124,869.51
Property Tax	\$ 1,129,957.51	
Delinquent Tax	5088.00	
Delinquent Tax Rate	0.45	



Use this worksheet to calculate alternate limits when adequate data is available.

Receiving Stream: Cross Creek

[illegible]

Water Quality Certification Recommendation: recommended	
2013 Limits Recommended:	
HAC Limits Recommended:	
99th Percentile Alternate Limits Recommended:	4.83 mg/l
Insufficient data - Monitoring Recommended:	
Additional Notes:	



### Example 3 - Cheney, Kansas, Municipal Screener Between 1.0% and 2.0%





**Kansas Eligibility Determination for Wastewater Lagoon Variance - Ammonia**  
**July 12, 2016**

Prepared by: Frank Weinhold

Date Prepared: November 10, 2016

Reviewed by: \_\_\_\_\_

Date accepted: \_\_\_\_\_

Name of Interested City: Cheney

County City Resides in: Sedgwick

1. Assess:

- a. Review NPDES permit to determine if the discharger can meet the new ammonia criteria.
- b. Assess the historical ammonia effluent data and compare to the projected 2013 ammonia criteria limits; compare the data sets to determine if the discharger can meet the required ammonia limitations. If the sample data presents >1 violations over the period of record compared to the relative 2013 ammonia limits, then the facility can proceed to the financial eligibility calculation, if not then reissue the permit with new limits based on the 2013 ammonia criteria.
- c. The discharger can meet the new ammonia criteria: ☐ Yes ☒ No ☐ More data needed

If the historical effluent data from the period of record exceeds the projected 2013 ammonia criteria limits in two or more samples then complete this form in its entirety.

2. Go to the US Census Bureau's website (below) to locate the following information

[http://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml)

a. City Population: 2159 Date of Census: 2010

b. Median Household Income (MHI) under the income tab on the right: \$ 68,417.00

Date of Census: 2010-2014

c. State MHI: \$51,872.00

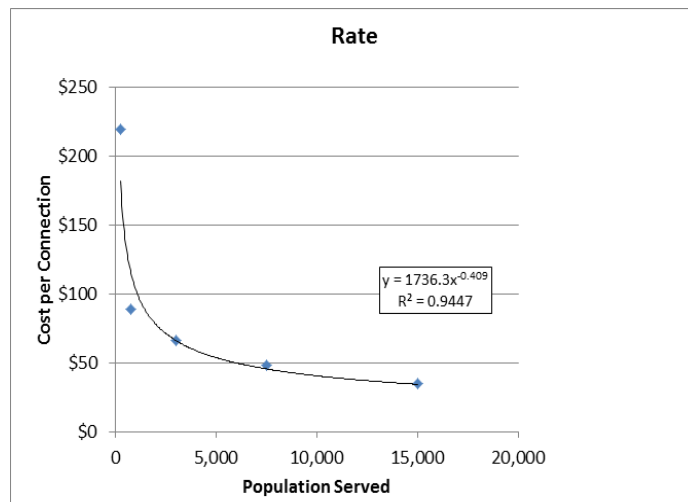
3. Calculate cost of mechanical plant: \$ 75.15 per connection per month

$$y = 1736.3x^{-0.409} \text{ where } x \text{ is the population of the town}$$

The equation used to calculate the cost of a new mechanical plant as derived from a set of cost data provided by Tetra Tech in their Report *Kansas Lagoon Upgrades to Meet Water Quality Standards for Ammonia*. KDHE utilized the cost per facility (Located in Table 15 within the report) and plotted that against the population serviced by that sized facility. Calculating the cost per connection by

population serviced gives a more accurate and relatable expense that will be incurred by the rate payers. The result can be found in Figure 1.

Figure 1: Rate Curve



4. Calculate the percent of (the city's annual) MHI that city sewer utility residential customers would be paying to fund a new mechanical plant (this is the municipal primary screener): 1.32 %

$$\frac{(\text{Cost of mechanical plant (step 3)} \times 12)}{\text{MHI}} \times 100\% = \text{Cost of new plant as a Percent of MHI}$$

If the municipal primary screener exceeds 4.0% then you may stop here and not continue on to calculate the secondary indicators. Proceed to calculate alternative ammonia effluent limit (go to step 17). Table 2.2 – Assessment of the Substantial Impacts Matrix – if the Economic Guidance (see section 16 of this form) indicates that the primary indication (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, a level of 100% greater than the 2% MHI will be utilized. The 4% value represents a threshold level where completion of the secondary economic test is expected to be unnecessary expenditure of resources.

5. First (to find the county unemployment) go to <https://klic.dol.ks.gov/gsipub/index.asp?docid=402> and select the most recent month available. This will direct you to a map of Kansas with all unemployment rates for each county as a whole, find the county in which the city of interest resides.

a. County Unemployment rate: 4.7 % Date: September / 2016

Go to <http://data.bls.gov/timeseries/LNS14000000> and scroll to the bottom and find the unemployment rate for the month and year that matches the most recent KS County data you obtained above.

b. National Unemployment rate: 5.0 % Date: September / 2016

6. Go to the Department of Administration's website (below) and click on the link for the "Cities" most recent **completed** fiscal year's municipal budgets <https://admin.ks.gov/offices/chief-financial->

[officer/municipal-services/municipal-budgets](#) chose the city you're working with and download their budget. If you cannot find their budget you may need to go back one fiscal year. Open/Save the file and look for the following data:

- a. Total assessed valuation: \$12,330,028.00 Date: 2015
- b. The assessed valuation is typically 14% of the Full Market Value of Taxable Property in a small Kansas town.

Calculate Full Market Value of Taxable Property: \$ 88,071,628.57

$$\frac{\text{Total Assessed Valuation}}{0.14} = \text{Full Market Value of Taxable Property}$$

- c. Property Tax: To calculate the property tax value use the Property Tax spread sheet form in the Master Flow Template and county tax levy sheet found at <https://admin.ks.gov/offices/chief-financial-officer/municipal-services/county-tax-levy-sheets> for the most recent year and correct county:

\$ 1,914,754.71 Date: 2015

- d. Delinquent Tax Rate: 0 % Date: 2015
- e. Total Bond Value (if any can be found under the Statement of Indebtedness): \$ \_\_\_\_\_
- i. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_
- ii. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_
- iii. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_
- iv. Bond Value: \$ \_\_\_\_\_ Year of Issue: \_\_\_\_\_ Bond Type: \_\_\_\_\_
- f. Total Debt (usually on the last page found in the NOTICE OF HEARING at the bottom):
- \$ 2,459,382.00 Date: 2015

Within the budget if the town holds any bonds or other debt or school district debts you will need to go through step 7 and find if the town has a bond rating. If they do not have a bond rating check the box in 7b and proceed to step 8.

7. Bond Rating: Go to <http://emma.msrb.org/Main/QuickSearch> and type the city name into the search bar and click the green arrow. The search will only return a link if the city holds any bonds. Click on the city name. If the city has a bond rating (not all cities that issued bonds have a rating) it can be found in the far left column.

- a. Overall Bond Rating: NA Date: \_\_\_\_\_
- b. ☐ No Bond Issue Information Provided

8. Calculate the number of rate payers: 863.6

$$\text{rate payers} = \text{population} \div 2.5$$

9. Calculate the percent difference between the City's MHI (2c) and State MHI (2b): -31.90 %  
When the percent difference value is greater than 10% below the State MHI and is a positive value it is representing a City MHI below State MHI. When the percent difference value is greater than 10% above the State MHI the value will be negative and it is representing a City MHI above the State MHI

$$\frac{\text{State MHI} - \text{City MHI}}{\text{State MHI}} \times 100\% = \text{Percent Difference}$$

10. Calculate the difference between County's unemployment rate (5a) and the National unemployment rate (5b): -0.30 %

$$\text{County Unemployment} - \text{National Unemployment} = \text{Difference}$$

11. Calculate Property tax as a percent of full market value of all taxable property: 2.17 %

$$\frac{\text{Property Tax (6c)}}{\text{Full Market Value of Taxable Properties (6b)}} \times 100\% = \text{Property tax as a percent of Valuation}$$

12. Calculate overall debt as a percentage to full market value of all taxable property: 2.79 %

$$\frac{\text{Overall Debt (6f)}}{\text{Full Market Value of Taxable Property (6b)}} \times 100\% = \text{Debt as a percent of Full Market Value of Taxable Property}$$

13. Calculate Property Tax Collection Rate: 100 %

$$100\% - \text{Delinquency Tax Rate} = \text{Property Tax Collection Rate}$$

14. *Economics Test: All the calculations have been completed; take the values calculated and see where they fall on the table below to find the secondary indicators.*

Find where the calculated values fall on each of the rows, follow the column down to the bottom of the table and the large value (1, 2, or 3) below is the secondary indicator. Record the secondary indicator in the space provided below. If the value does not fall anywhere in the table provided (i.e.: no bond rating) give the item a secondary indicator of zero (0).

When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently the most recent rating for a sewer bond should be used. Recent bond rating are included in municipal bond reports from rating agencies (e.g., *Moody's Bond Record*, *Standard and Poor's Corporation*).

See next page for Secondary Indicators tables and calculations.

## SECONDARY INDICATORS

	Secondary Indicators		
Indicator	Weak	Mid-Range	Strong
Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) or Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2%-5%	Below 2%
Unemployment	More than 1% above National Average	National Average	More than 1% below National Average
Median Household Income	More than 10% below State Median	State Median	More than 10% above State Median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2%-4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	>98%

Secondary Indicator Value

**1**

**2**

**3**

	Value	Secondary Indicator
Bond Rating (step 7a)		
Overall Net Debt as Percent to full market value of taxable property (Step 12)	2.79	2
Unemployment (Step 10) - <i>difference between County and National unemployment rates</i>	-0.30	2
Median House Hold Income (Step 9) - <i>% difference between State and City MHI (a positive value represents a City MHI below the State MHI and a negative value represents a City MHI above the State MHI)</i>	-31.90	3
Property Tax Revenues as a Percent of Full Market Value of Taxable Property (Step 11)	2.17	2
Property Tax Collection Rate (Step 13)	100	3

Average Value of Secondary Indicator: 2.4

When there are six secondary indicators identified calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Six Secondary Indicators}}{6}$$

When there are five secondary indicators identified (no bond rating) calculate the average as follows:

$$\text{Average} = \frac{\text{Sum of Five Secondary Indicators}}{5}$$

15. *Assessment of Substantial Impacts (Matrix): Use below provided table to determine the feasibility of proposing a mechanical plant.*

Use calculated Annual User Charge per Residential Customer Percent of MHI value (Step 13) to find where the value falls within the three vertical columns and the average the secondary score (calculated above) to find where which row applies to the city of choice.

### ASSESSMENT OF SUBSTANTIAL IMPACTS MATRIX

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	True	X
Greater than 2.5	✓	✓	?

Secondary Score: 2.40

Key:

**?** Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

**X** No, the city cannot afford the proposed mechanical plant and the variance can be granted.

**✓** Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

**Conclusion:** The City (check the answer that best applies):

- ☐ can afford the proposed mechanical treatment facility
- ☐ cannot afford the proposed mechanical treatment facility
- ☒ it is uncertain a city can afford the proposed mechanical treatment facility; additional studies are needed.

If the City cannot afford the proposed mechanical treatment facility then proceed to step 17, calculating the alternative ammonia effluent limits.

If it is uncertain as to whether the facility can afford the proposed mechanical plant, proceed by issuing the permit with a temporary variance requiring further study and including the alternate ammonia effluent limits.

16. When a discharger cannot meet the EPA 2013 ammonia criteria limits calculate the highest attainable condition (HAC) alternate limits. Alternate ammonia HAC limits will be derived as the 99th percentile or the highest value of recent historical effluent discharge data, whichever is lower. The procedure to calculate the alternate ammonia HAC limits are presented in the Master Flow template on worksheet E. Information from section 1 of this form may be used in this section.
17. Include a pollution minimization plan (PMP) in each NPDES permit for dischargers who qualify for the Ammonia MDV, or which later qualify for an individual variance after further studies are performed. See the Kansas Variance Register and the Kansas Surface Water Implementation Procedure for details on the PMP.





## Worksheet A

**EPA 2013 Ammonia Criteria Limits - Mussels Present (whole state)**Discharger: City of Cheney NPDES Permit #: M-AR20-0002 Date: 02/25/16Receiving Stream: North Fork of Nennescah River

Month	Temp	pH	ELS (0=abs,1=pres)	Receiving Stream 30Q10 (cfs)	1
Jan	2.7	8	NA	Plant Flow	0.36 MGD
Feb	6.8	8	NA		<u>0.55692 cfs</u>
Mar	10.9	8	NA	Aquatic Life Support Factor	0.5
April	18.4	8	NA	(0.25 for ONRW & Special)	
May	21.1	8	NA	(0.5 for Expected)	
June	25	8	NA	(1.0 for Restricted)	
July	26.2	8	NA	Background Concentration (mg/l)	<u>0.15</u>
Aug	26.6	8	NA	Mixing Zone allowance	<u>1</u>
Sep	21.1	8	NA	ZID allowance	<u>0.1</u>
Oct	14.9	8	NA		
Nov	8.2	8	NA		
Dec	3.8	8	NA		

Temp data from: SC280Chronic Permit Limit  
(Monthly Average)

Chronic Criterion

Jan	4.75	1.80
Feb	4.75	1.80
Mar	3.64	1.40
April	2.14	0.86
May	1.75	0.72
June	1.30	0.56
July	1.19	0.52
Aug	1.15	0.51
Sep	1.75	0.72
Oct	2.75	1.08
Nov	4.38	1.66
Dec	4.75	1.80

Acute Permit Limit  
(Daily Maximum)

Acute Criterion

Jan	10.32	8.77
Feb	10.32	8.77
Mar	9.77	8.30
April	5.23	4.46
May	4.18	3.56
June	3.02	2.58
July	2.73	2.34
Aug	2.64	2.26
Sep	4.18	3.56
Oct	7.00	5.96
Nov	10.32	8.77
Dec	10.32	8.77



**2013 Ammonia Criteria Effluent Limits Summary**Discharging Lagoon Name: City of CheneyDischarging Lagoon Permit number: M-AR20-0002Date: 11/10/2016

Using most current Permit or Water Quality Report Insert most current Ammonia Limitation on Lagoon

		2013 NH <sub>3</sub> Chronic	2013 NH <sub>3</sub> Acute
		mg/L	
Janurary	1	4.75	10.32
Feburary	2	4.75	10.32
March	3	3.64	9.77
April	4	2.14	5.23
May	5	1.75	4.18
June	6	1.30	3.02
July	7	1.19	2.73
August	8	1.15	2.64
September	9	1.75	4.18
October	10	2.75	7.00
November	11	4.38	10.32
December	12	4.75	10.32



**Worksheet B - Ammonia Effluent History****Dishcharging Lagoon Name:** City of Cheney**Dishcharging Lagoon Permit number:** M-AR20-OO02**Receiving Stream:** North Fork of Nennescah River

Copy &amp; Paste Data Exported from Oracle into this Sheet

Federal			Effluent				
KS Permit No.	Permit No.	Outfall	Parameter	Data	Units	Date of Sample	Month
M-AR20-OO02	KS0094226	001A1	NH3	2.2	MG/L	3/24/2008	3
M-AR20-OO02	KS0094226	001A1	NH3	0.5	MG/L	6/24/2008	6
M-AR20-OO02	KS0094226	001A1	NH3	0.34	MG/L	7/21/2008	7
M-AR20-OO02	KS0094226	001A1	NH3	0.92	MG/L	11/18/2008	11
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	3/9/2009	3
M-AR20-OO02	KS0094226	001A1	NH3	0.11	MG/L	6/10/2009	6
M-AR20-OO02	KS0094226	001A1	NH3	0.78	MG/L	7/16/2009	7
M-AR20-OO02	KS0094226	001A1	NH3	0.2	MG/L	10/8/2009	10
M-AR20-OO02	KS0094226	001A1	NH3	1.22	MG/L	1/27/2010	1
M-AR20-OO02	KS0094226	001A1	NH3	2.76	MG/L	7/14/2010	7
M-AR20-OO02	KS0094226	001A1	NH3	2.09	MG/L	12/21/2010	12
M-AR20-OO02	KS0094226	001A1	NH3	0.45	MG/L	3/21/2011	3
M-AR20-OO02	KS0094226	001A1	NH3	6.24	MG/L	6/13/2011	6
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	10/31/2011	10
M-AR20-OO02	KS0094226	001A1	NH3	0.69	MG/L	3/5/2012	3
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	6/6/2012	6
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	3/28/2013	3
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	6/24/2013	6
M-AR20-OO02	KS0094226	001A1	NH3	0.05	MG/L	9/25/2013	9
M-AR20-OO02	KS0094226	001A1	NH3	0.26	MG/L	12/9/2013	12
M-AR20-OO02	KS0094226	001A1	NH3	0.59	MG/L	3/24/2014	3
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	6/23/2014	6
M-AR20-OO02	KS0094226	001A1	NH3	3.04	MG/L	12/9/2014	12
M-AR20-OO02	KS0094226	001A1	NH3	0.49	MG/L	3/26/2015	3
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	6/22/2015	6
M-AR20-OO02	KS0094226	001A1	NH3	0.1	MG/L	9/14/2015	9
M-AR20-OO02	KS0094226	001A1	NH3	4.59	MG/L	12/28/2015	12
M-AR20-OO02	KS0094226	001A1	NH3	1.09	MG/L	3/21/2016	3
M-AR20-OO02	KS0094226	001A1	NH3	0.05	MG/L	6/13/2016	6



Worksheet C - Comparison of Historical Ammonia Data for WWTP

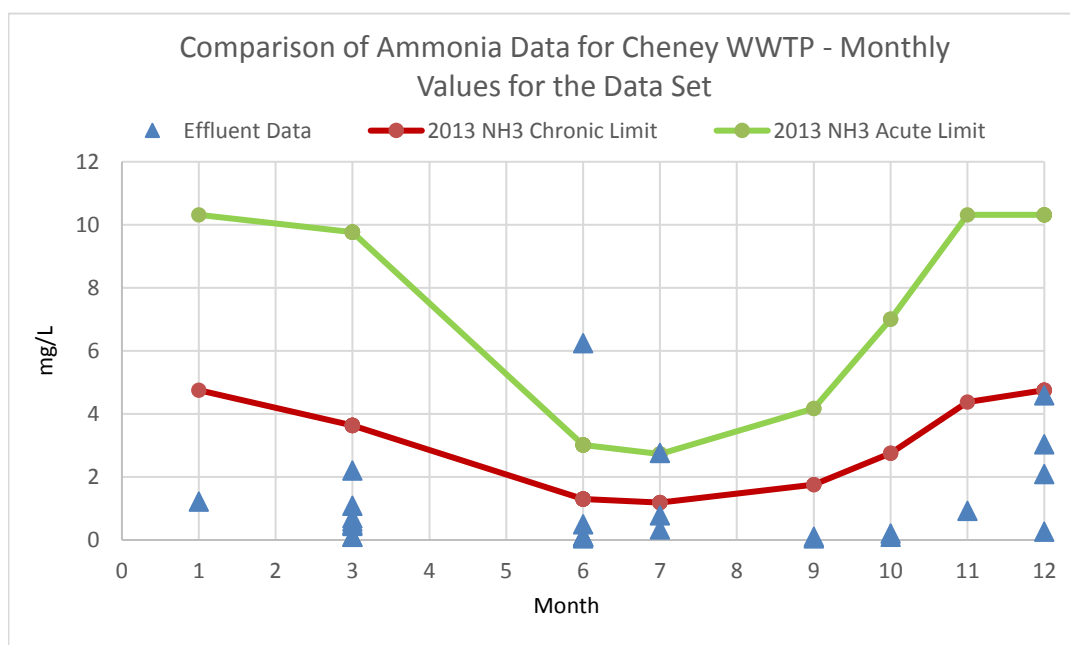
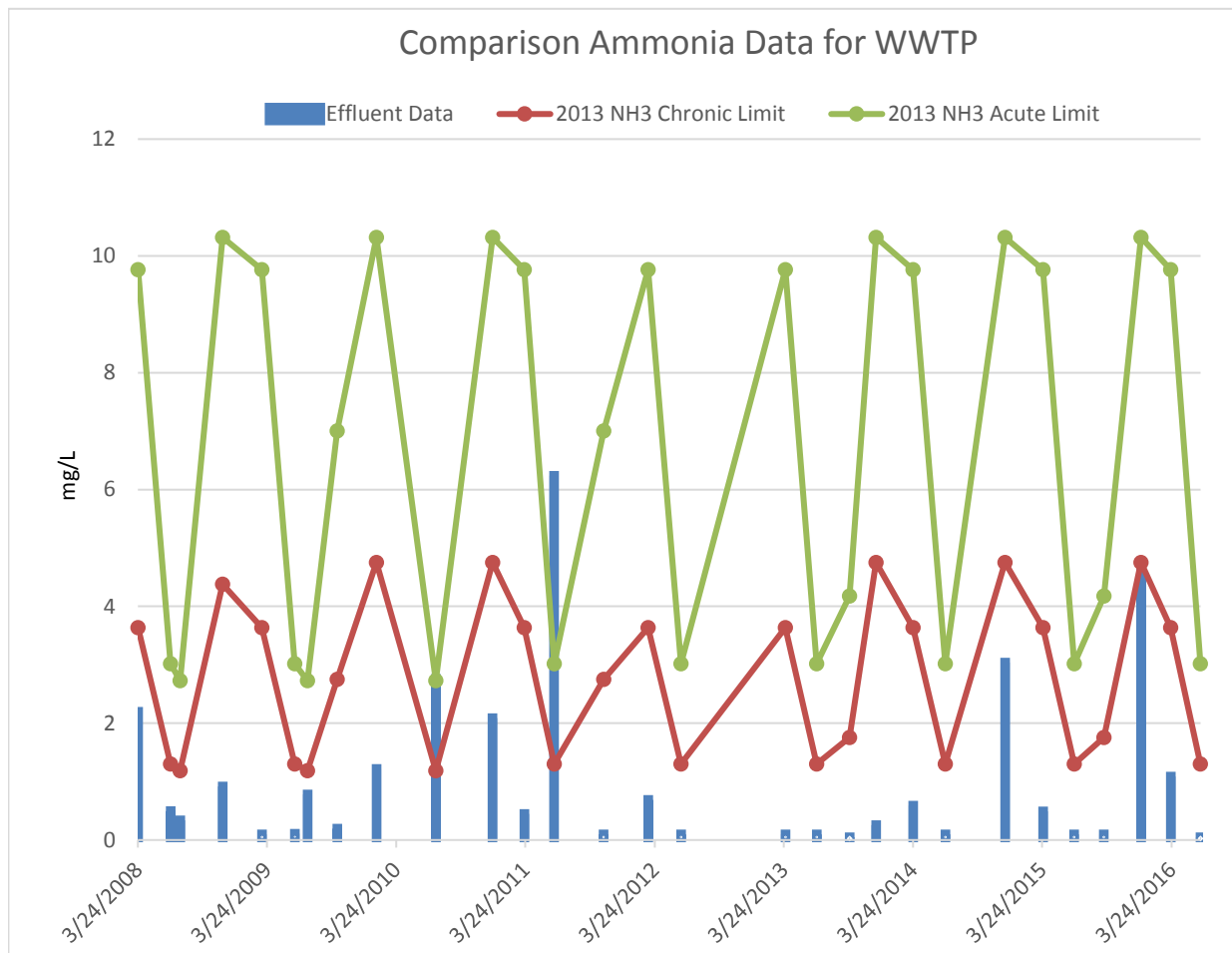
Dishcharging Lagoon Name:

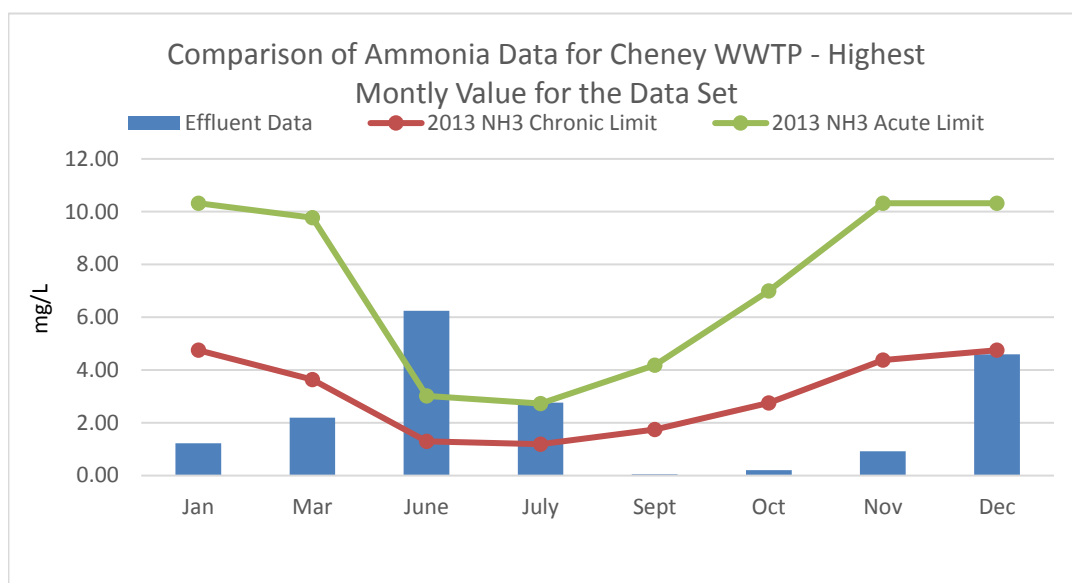
City of Cheney

Dishcharging Lagoon Permit number:

M-AR20-0002

Date: 8/25/2016





Date of Sample	Month	Effluent Data	2013 NH <sub>3</sub> Chronic Limit	2013 NH <sub>3</sub> Acute Limit
3/24/2008	3	2.2	3.64	9.77
6/24/2008	6	0.5	1.30	3.02
7/21/2008	7	0.34	1.19	2.73
11/18/2008	11	0.92	4.38	10.32
3/9/2009	3	0.1	3.64	9.77
6/10/2009	6	0.11	1.30	3.02
7/16/2009	7	0.78	1.19	2.73
10/8/2009	10	0.2	2.75	7.00
1/27/2010	1	1.22	4.75	10.32
7/14/2010	7	2.76	1.19	2.73
12/21/2010	12	2.09	4.75	10.32
3/21/2011	3	0.45	3.64	9.77
6/13/2011	6	6.24	1.30	3.02
10/31/2011	10	0.1	2.75	7.00
3/5/2012	3	0.69	3.64	9.77
6/6/2012	6	0.1	1.30	3.02
3/28/2013	3	0.1	3.64	9.77
6/24/2013	6	0.1	1.30	3.02
9/25/2013	9	0.05	1.75	4.18
12/9/2013	12	0.26	4.75	10.32
3/24/2014	3	0.59	3.64	9.77
6/23/2014	6	0.1	1.30	3.02
12/9/2014	12	3.04	4.75	10.32
3/26/2015	3	0.49	3.64	9.77
6/22/2015	6	0.1	1.30	3.02
9/14/2015	9	0.1	1.75	4.18
12/28/2015	12	4.59	4.75	10.32
3/21/2016	3	1.09	3.64	9.77
6/13/2016	6	0.05	1.30	3.02



## Worksheet D - Economic Eligibility Calculations

Discharging Lagoon Name: City of CheneyDischarging Lagoon Permit number: M-AR20-0002

Prepared by: Frank R. Weinhold

Date Prepared: November 10, 2016

Reviewed by:

Date Accepted:

**Determining Financial Eligibility for Lagoon Variance***Inputs*

City:	Cheney
County:	Sedgwick
City Population:	2159
City MHI:	\$ 68,417.00
State MHI:	\$ 51,872.00

Property Tax Unit	Mill Rate	
State of Kansas	1.500	
County	29.383	
City	60.740	
USD Valuation	62.641	
Library		
Fire District		
Cemetery		
Township	1.028	
Ambulance		
Extension District		
Total Mill Levy	155.292	

**Municipal Preliminary Screener****1.32** \*\*If value is above 4% you may stop hereMechanical Plant Cost to User 75.15 \$ per User per Month

County Unemployment Rate:	4.7
National Unemployment Rate:	5.0
Assessed Valuation	\$ 12,330,028.00
Full Market Value of Property:	\$ 88,071,628.57
Property Tax:	\$ 1,914,754.71
Delinquent Tax:	
Delinquent Tax Rate:	
Total Debt:	\$ 2,459,382.00

To Input the Bond Rating Correctly:

If the Bond Rating is \_\_\_\_\_ Input \_\_\_\_\_

Below BBB/Baa	1
BBB/Baa	2
Above BBB/Baa	3
If there is no Bond rating	0

Bond Rating: 0*Calculated Values**Secondary Indicators*

		Weak	Mid-Range	Strong
Bond Rating:	0	0	0	0
Overall Net Debt as Percent of Full Market Values of City Taxable Property	2.79 %	0	2	0
Unemployment: Difference between County and National Rates	-0.30 %	0	2	0
Median Household Income: Percent Difference State MHI minus City MHI (>10% below will be a positive value and >10% above will be a negative value)	-31.90 %	0	0	3
Property Tax Burden as a Percent of Full Market Value of City Taxable Property	2.17 %	0	2	0
Property Tax Collection Rate	100 %	0	0	3

Cost of Building a New Mechanical

Treatment Facility 75.15 \$ per User per Monthas a percentage of MHI 1.32 %**Secondary Score** 2.40**Municipal Preliminary Screener** 1.32**Conclusion :**2.40

Primary Score: 1.32

**Secondary Score****Municipal Preliminary Screener**

	Less than 1.0	Between 1.0 & 2.0	Greater than 2.0
Less than 1.5	FALSE	FALSE	FALSE
Between 1.5 and 2.5	FALSE	TRUE	FALSE
Greater than 2.5	FALSE	FALSE	FALSE

Key: Look for coloring of the cell that reads TRUE

Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. The variance can be granted temporarily while further study is conducted to determine whether the city or facility can afford a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability. Factors may include measures such as the impact on low or fixed income households; the presence of a failing local industry; other projects the community would have to forgo in order to comply with water quality standards; other specific financial and economic indicators; and projected community population growth or decline.

No, City cannot afford project mechanical plant and the variance can be granted.

**Comments:**

Reading the table: The Preliminary Screener is 1.32 which is between 1.0 and 2.0 and the Secondary Score is 2.4; therefore the City of Cheney may be able to afford a Mechanical Plant. The City of Cheney had two ammonia violations on 6/13/11 and 7/14/10.



Property Tax Calculation - Attachment to Worksheet D

Dishcarging Lagoon Name: City of Cheney

Dishcarging Lagoon Permit  
number: M-AR20-0002

Date: 11/10/2016

Fill in green squares with Information off of County Tax Levy Sheet

Name of City:	Cheney	County:	Sedgwick
Tax Year:	2015	Prepared by:	Frank R. Weinhold
Ks State Valuation	\$ 4,410,040,706.00	Date:	8-Nov-16
County Valuation	\$ 4,410,040,706.00	USD Gen'l Fund Valuation:	\$ 20,767,728.00
City Valuation:	\$ 12,330,028.00		
USD Valuation :	\$ 23,364,168.00		
Township	\$ -		
Fire District	\$ -		
Cemetery	\$ -		

Taxing Unit	Mill Rate	Tax Dollars Levied
State of Kansas	1.500	18,495.04
County	29.383	362,293.21
City	60.740	748,925.90
USD Valuation	62.641	772,365.28
Township	1.028	12,675.27
Library		0.00
Fire District		0.00
Cemetery		0.00
Total Tax Dollars Levied	155.292	\$1,914,754.71
Total Property Tax After Delinquency		\$1,914,754.71

Property Tax	1914754.708
Delinquent Tax	\$-
Delinquent Tax Rate	0.000



## Worksheet E- EPA 2013 Ammonia Criteria Limits - Mussels Present (whole state)

Use this worksheet to calculate alternate limits when adequate data is available.

Discharger: City of Cheney NPDES Permit #: M-AR20-0002 Date: 8/25/2016Receiving Stream: North Fork of Nennescah River

Annual

DATE mg/L VIOLATIONS

1/27/2010 1.22 No

3/24/2008 2.2 No

3/9/2009 0.1 No

3/21/2011 0.45 No

3/5/2012 0.69 No

3/28/2013 0.1 No

3/24/2014 0.59 No

3/26/2015 0.49 No

3/21/2016 1.09 No

6/24/2008 0.5 No

6/10/2009 0.11 No

6/13/2011 6.24 Yes

6/6/2012 0.1 No

6/24/2013 0.1 No

6/23/2014 0.1 No

6/22/2015 0.1 No

6/13/2016 0.05 No

7/21/2008 0.34 No

7/16/2009 0.78 No

7/14/2010 2.76 Yes

9/25/2013 0.05 No

9/14/2015 0.1 No

10/8/2009 0.2 No

10/31/2011 0.1 No

11/18/2008 0.92 No

12/21/2010 2.09 No

12/9/2013 0.26 No

12/9/2014 3.04 No

12/28/2015 4.59 No

**HAC Limits (Highest Limit)**

Annual 6.24

**99th Percentile Alternate**

Annual 5.78

**Chronic Permit Limit  
(Monthly Average)**

Jan 4.75

Feb 4.75

Mar 3.64

April 2.14

May 1.75

June 1.30

July 1.19

Aug 1.15

Sep 1.75

Oct 2.75

Nov 4.38

Dec 4.75

**Acute Permit Limit  
(Daily Maximum)**

Jan 10.32

Feb 10.32

Mar 9.77

April 5.23

May 4.18

June 3.02

July 2.73

Aug 2.64

Sep 4.18

Oct 7.00

Nov 10.32

Dec 10.32

**Water Quality Certification Recommendation:**

(Log recommended limitations by the type of limitation being recommended.)

2013 Limits Recommended: NA

HAC Limits Recommended: NA

99th Percentile Alternate Seasonal

Limits Recommended: 5.78 mg/L

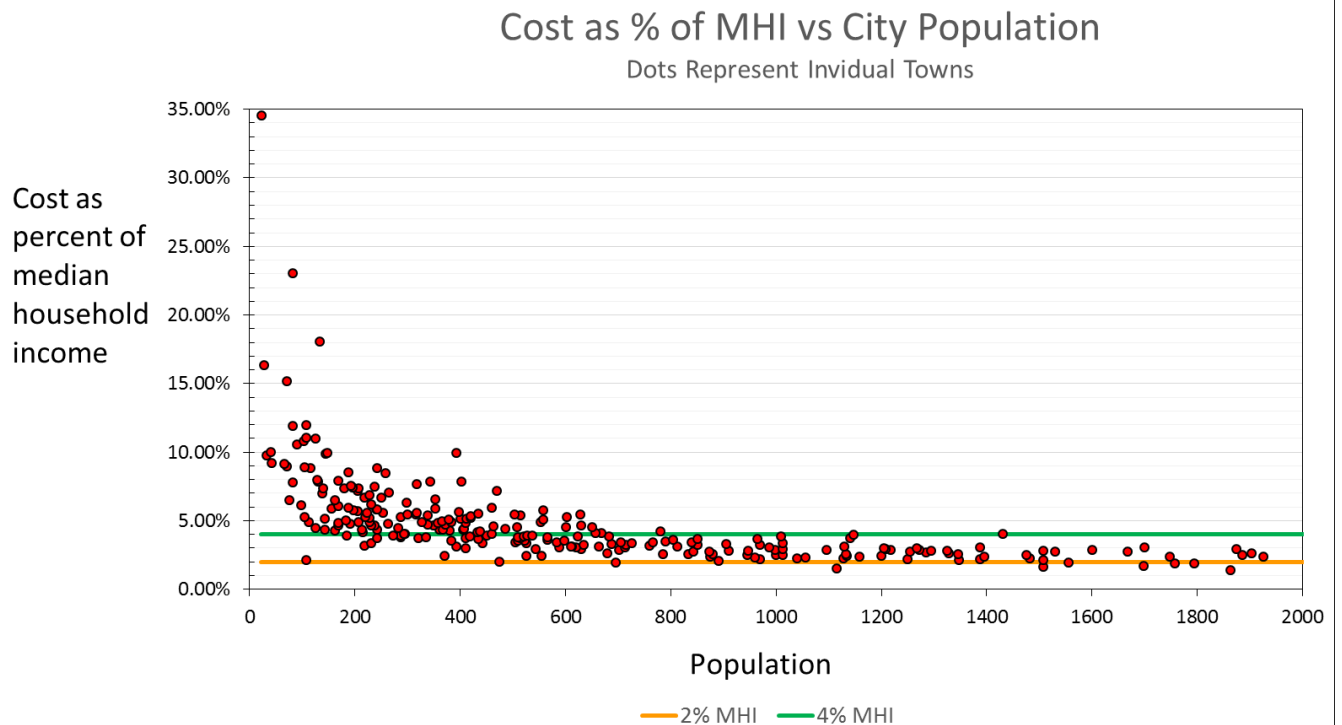
Insufficient data - Monitoring Recommended: NA

Additional Notes:



# APPENDIX I

## Widespread Social and Economic Impact Graphic







## APPENDIX J

# Overflowing Stabilization Lagoon Kansas Water Pollution Control Inspection Report





Bureau of Environmental Field Services  
XXXXXX District Office  
Street Address  
City, KS Zip Code

Phone: XXX-XXX-XXXX  
Fax: XXX-XXX-XXXX  
XXXXXX@kdheks.gov  
www.kdheks.gov/befs

Susan Moser, MD, Acting Secretary

Sam Brownback, Governor

# Overflowing Stabilization Lagoon Kansas Water Pollution Control Inspection Report

## I. General Information

KDHE Representative: \_\_\_\_\_

KWPC Permit No. \_\_\_\_\_

Inspection Date: \_\_\_\_\_

Previous Inspection Date: \_\_\_\_\_

	Yes	No
Is there a schedule of compliance in the current permit?	<input type="checkbox"/>	<input type="checkbox"/>
Is there an enforcement order against the permittee for this facility?	<input type="checkbox"/>	<input type="checkbox"/>

Facility Name: \_\_\_\_\_

Facility Address: \_\_\_\_\_

Primary Mailing Address: \_\_\_\_\_

Owner's Mailing Address: \_\_\_\_\_

Design Capacity: \_\_\_\_\_

Current Population: \_\_\_\_\_

## II. Contacts / Responsible Staff / Certified Operators

Name	Present	Title	Certification Level	Email Address	Telephone No.

	Yes	No	N/A	Comments
a. Does the level of staff certification comply with K.A.R. 28-16-36?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## III. Facility Information

	Yes	No	Comments
a. Is the facility description in the permit accurate?	<input type="checkbox"/>	<input type="checkbox"/>	
b. Briefly describe the operation and condition of the facility.			
c. Describe any significant changes, additions or improvements to the facility since the last inspection.			
d. Any current citizen complaints?	<input type="checkbox"/>	<input type="checkbox"/>	
e. Are operation and maintenance manuals available?	<input type="checkbox"/>	<input type="checkbox"/>	

## IV. Influent / Effluent

**a. Influent**

	Yes	No	Comments
i. Has there been or are there any anticipated significant changes in the influent quality and / or quantity?	<input type="checkbox"/>	<input type="checkbox"/>	
ii. Discuss any high strength or problem influents to the treatment system			
iii. Does this facility accept other types of hauled in wastewater or septage from residential, industrial, commercial or other? Describe.			
iv. Are there any major customers that provide wastewater to this facility? If yes, who, type of wastewater, estimated quantity?			

**b. Effluent Reuse**

	Yes	No	Comments
i. Is treated effluent used for irrigation?	<input type="checkbox"/>	<input type="checkbox"/>	
a) Reason for use of irrigation, i.e., high level control, fulfill contract, etc.	<input type="checkbox"/>	<input type="checkbox"/>	
b) If yes, how often?	<input type="checkbox"/>	<input type="checkbox"/>	
c) Is the irrigation water disinfected prior to use?	<input type="checkbox"/>	<input type="checkbox"/>	
d) Location of irrigation used:			
i) Public places such as Golf Course.	<input type="checkbox"/>	<input type="checkbox"/>	
ii) Cemeteries, Ball Fields, Parks.	<input type="checkbox"/>	<input type="checkbox"/>	
iii) Other Public Places. Describe.	<input type="checkbox"/>	<input type="checkbox"/>	
iv) Field crop irrigation.	<input type="checkbox"/>	<input type="checkbox"/>	
a) Is the crop harvested? (including pasturing of animals)	<input type="checkbox"/>	<input type="checkbox"/>	
v) Other non-public places. Describe.	<input type="checkbox"/>	<input type="checkbox"/>	
vi) Facility grounds including dikes.	<input type="checkbox"/>	<input type="checkbox"/>	
e) Type of irrigation used:			
i) Stationary spray nozzles.	<input type="checkbox"/>	<input type="checkbox"/>	
ii) Gated pipe.	<input type="checkbox"/>	<input type="checkbox"/>	
iii) Walking guns or similar.	<input type="checkbox"/>	<input type="checkbox"/>	
iv) Pump & dump thru hose/pipe.	<input type="checkbox"/>	<input type="checkbox"/>	
f) Are there any other concerns or special considerations with the irrigation process?	<input type="checkbox"/>	<input type="checkbox"/>	
ii. Is treated effluent used on-site or off-site other than for irrigation?	<input type="checkbox"/>	<input type="checkbox"/>	
a) If yes, how often? Percent of effluent flow?			
b) Who uses it?			
c) Is the treated wastewater disinfected prior to re-use?	<input type="checkbox"/>	<input type="checkbox"/>	
iii. If effluent flows to a stream, describe any negative effects on the receiving stream.			
iv. Are there any other concerns or special considerations with the re-use process?	<input type="checkbox"/>	<input type="checkbox"/>	

- c. Provide a line drawing showing the disinfection equipment, piping, valves and flow meters used to determine the amount and direction of re-use water and discharge to surface waters of the State. Identify the location where the permittee actually samples the influent and effluent for permit compliance monitoring. Include multiple points, if applicable. Be specific.

	Comments
d. Does the facility split flow between re-use and discharge to waters of the state or is it all one direction or the other?	

## V. Sampling

	Yes	No	Comments
a. Are samples collected in appropriate location(s) adequate – using the proper sampling procedures?	<input type="checkbox"/>	<input type="checkbox"/>	
b. Who collects and analyzes? What is the name of the laboratory used?			
c. Is the laboratory used, KDHE-certified for the permit required parameters?	<input type="checkbox"/>	<input type="checkbox"/>	
d. Are the correct types of samples being collected by the facility?	<input type="checkbox"/>	<input type="checkbox"/>	
e. Was a sample collected by the inspector for analysis during the inspection?	<input type="checkbox"/>	<input type="checkbox"/>	
f. Has the permittee been in compliance with the KWPC Permit effluent limitations since the last inspection? (Note failures here or attach summary page of all failures.)	<input type="checkbox"/>	<input type="checkbox"/>	

### 503 Sludge Program

- a. **All lagoons**  
KDHE, for the current time, retains control of the 503 sludge program for domestic wastewater treatment lagoons. KDHE, using provisions previously agreed upon with EPA, has produced a reduced 503 sludge reporting form for 503 sludge removal from lagoons. The forms are located on the KDHE-BOW-Technical Services website and are labeled specifically for lagoons.

These forms are to be sent to the central office when the desludging project is complete. The central office will review the reports.

## VI. Reporting and Recordkeeping

	Yes	No	N/A	Comments
a. Is a copy of the KWPC Permit available on site or at a nearby office? Describe location?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Have all Discharge Monitoring Reports been submitted to KDHE on time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Are Discharge Monitoring Reports available on site or at a nearby office? Describe location?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Are the Discharge Monitoring Reports maintained by permittee for three (3) years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

e. Are records of laboratory instrumentation maintenance maintained by permittee for at least three (3) years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Are records of laboratory instrumentation calibration maintained by permittee for three (3) years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Are laboratory records maintained by permittee for three (3) years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. Are all appropriate records and data maintained and available on site or at a nearby office? Describe location?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
i. Are there other permit violations since the previous inspection, i.e., failure to meet the schedule of compliance? If so, what type?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## VII. Incident History

a. Since the last inspection how many bypasses have been reported at the following locations?

Treatment Facilities:		Lift Stations:		Collection System:		Private Service Lines:	
-----------------------	--	----------------	--	--------------------	--	------------------------	--

	Yes	No	N/A	Comments
b. Are incidents reported according to permit requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## VIII. Backup Power and Emergency Procedures

	Yes	No	N/A	Comments
a. Are backup power supplies or secondary power sources available for the treatment facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Are backup power supplies or secondary power sources available for the lift stations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Describe the frequency of exercise and maintenance of backup power sources.				
d. Are maintenance records for backup power supplies available?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Are there emergency procedures in the event of a power failure, equipment break down, etc...?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## IX. Lagoon Operation and Maintenance

a. What is the total number of cells:

Available		In Use	
-----------	--	--------	--

Cell I.D.	Order / Use (First, Second, Final etc...)	Discharge To Outfall		If Aeration		Sludge Measurement			Last Year Desludged
		Yes	No	# of Units	H.P.	Year	Excessive		
							Yes	No	
		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	

		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
--	--	--------------------------	--------------------------	--	--	--	--------------------------	--------------------------	--

Description	Comments
b. Describe aeration use in terms of hours/days and seasons of use.	

<b>c. Draw diagram of lagoon system showing influent, effluent and interconnecting lines.</b>

Description	Comments
d. Describe the watercolor and wave action.	

	Yes	No	N/A	Comments
e. Are there multiple draw off points?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Are the multiple draw off points properly used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Adequate	Inadequate	N/A	Comments
h. Are the fence, gate(s) and warning signs sufficient and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
i. Is erosion of dike(s) controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
j. Is animal burrowing on dike(s) controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
k. Is there sufficient grass cover on dikes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
l. Is grass mowed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
m. Is plant / tree growth controlled within the fence of the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
n. Is seepage through the lagoon dikes controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
o. Are aquatic weeds / build up of scum controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
p. Is the insect population minimal and controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
q. Are depth gauges maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
r. Is there a minimum of three (3) feet of water depth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
s. Is the influent structure properly distributing influent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
t. Is there a minimum of three (3) feet of freeboard in the lagoon(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
u. Is the effluent structure properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Yes	No	N/A	Comments
v. Is there evidence of short-circuiting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
w. Are there nuisance odor conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## X. Lift Stations Operation and Maintenance

Total number of lift stations		Number of lift stations inspected	
-------------------------------	--	-----------------------------------	--

	Comments
a. Describe lift station inspection and maintenance schedule(s).	
b. Describe alarm and monitoring systems.	
c. Type of lift stations.	

	Yes	No	N/A	Comments
d. Are all pumps operational?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Are pump running time registers operational?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Are maintenance and pumping volume records maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Is forced-air ventilation provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. Is there excessive leakage from pumps or piping?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
i. Is there excessive grease build-up in the wet well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
j. What chemical or methods are used to control grease buildup in the wet well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
k. Are operators familiar with confined space entry requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
l. Do any lift stations have a history of incidents or other mechanical problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
m. Does the facility have appropriate security measures in place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## XI. Collection System

	Comments
a. Describe the operation and condition of the collection system	

	Yes	No	Comments
b. Is there a significant inflow or infiltration problem? <i>If yes, describe what steps are being taken to control / correct the problem?</i>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Describe the sewer maintenance and repair activities since the last inspection, i.e. including the use of outside contractors.			



## **XII. Supplemental Conditions, Schedule of Compliance & Enforcement**

	Yes	No	N/A	Comments
a. Is there a schedule of compliance in the permit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Are they in compliance with the schedule?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Is there a current enforcement action on this facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Are they in compliance with the enforcement activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## **XIII. Comments and Recommendations**

	Yes	No	Comments
a. Are follow up actions needed?	<input type="checkbox"/>	<input type="checkbox"/>	

b. Issues and Deficiencies that must be addressed.

c. Recommendations that should be addressed.

d. Comments

Report Prepared and Submitted By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Approved By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_